

DxMONITOR

Animal Health Report

Inside this Issue

LabNEWS	1
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I. Patterns of Selected Diseases

Bovine Leukosis Virus	6
Paratuberculosis	8
Bovine Brucellosis	10
Bovine Tuberculosis	11
Bovine Spongiform Encephalopathy	12
Bovine Bluetongue Virus	14
Equine Viral Arteritis Virus	15
Equine Infectious Anemia	16
Equine Encephalomyelitis	17
Porcine Reproductive and Respiratory Syndrome Virus	18
Swine Brucellosis	20
Pseudorabies Virus	not reported this quarter

II. Selected Etiologic Agents Associated with Bovine Abortion

<i>Neospora</i> spp.	22
---------------------------	----

Appendix	23
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Spring 1996

The DxMONITOR reports trends of confirmed disease diagnoses and animal health information collected from veterinary diagnostic laboratories, State veterinarians, and the USDA:APHIS.

The DxMONITOR Animal Health Report is distributed quarterly as part of the Veterinary Diagnostic Laboratory Reporting System (VDLRS). The VDLRS is a cooperative effort of the American Association of Veterinary Laboratory Diagnosticians (AAVLD), the United States Animal Health Association (USAHA), and the United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA:APHIS).

Caution should be taken when extrapolating information reported in the DxMONITOR due to the inherent biases of submitted specimens. Trends should be interpreted with care. An increase in the number of positive tests for a given diagnosis/agent may be the result of a true increase in prevalence, or it may only reflect a new State testing requirement, a heightened awareness of the condition, or an increase in the number of laboratories reporting data.

Test results are presented as the number positive over the total number tested per State on U.S. maps for the current and previous quarter and as the ratio of the current quarter's positive compared to the average positive for the previous four quarters, by region, plotted on a log base 2 scale. Laboratory reported diseases in Section I are reported as tests. Diseases in Section II are reported as accessions. Increases may be a reflection of the addition of new laboratories and/or laboratories reporting additional diseases not previously reported.

In this issue: The disease reporting period for new data was October 1 through December 31, 1995. Data have been reported by 28 diagnostic laboratories and State veterinary offices in the States indicated on the facing page (two on hiatus), the National Veterinary Services Laboratories (NVSL), and the APHIS:Veterinary Services program staffs.

DxMONITOR Animal Health Report

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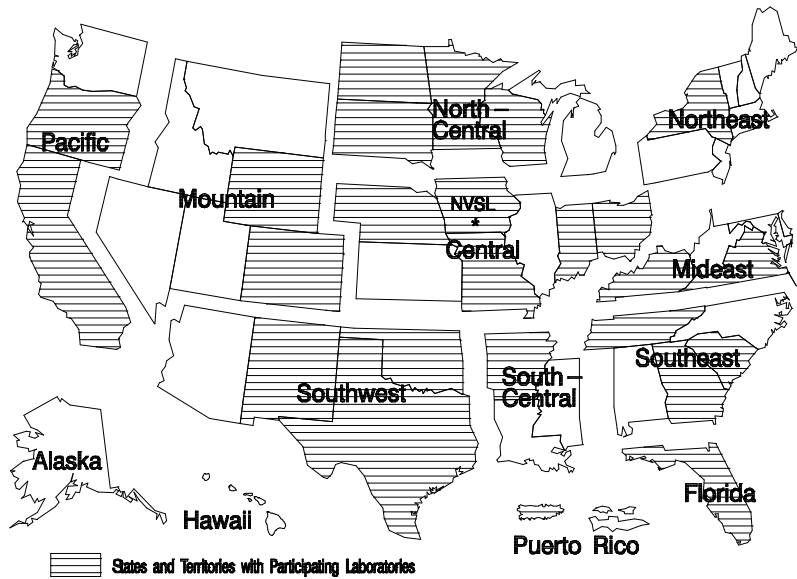
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**Articles may be reprinted with
acknowledgment of source.**

REGIONS OF THE VDLRS

Abbreviations for regions used in this issue are:

AK = Alaska
 CL = Central
 FL = Florida
 HI = Hawaii
 MDE = Mideast
 MTN = Mountain
 NOC = North-Central
 NOE = Northeast
 PC = Pacific
 PR = Puerto Rico & U.S. Virgin Islands
 SOC = South-Central
 SE = Southeast
 SW = Southwest
 UNK = Unknown



Contributing Laboratories

The following laboratories have contributed data reported in the DxMONITOR Animal Health Report. Thanks to all of the individuals at these laboratories who have worked to make this report possible.

- Arkansas Livestock and Poultry Commission Diagnostic Laboratory (Little Rock, AR)
- California Veterinary Diagnostic Laboratory System (Davis, CA)
- Colorado Veterinary Diagnostic Laboratories, Colorado State University, (Fort Collins, CO)
- Bureau of Diagnostic Laboratories, Florida Department of Agriculture (Kissimmee, FL)
- Veterinary Diagnostic Laboratory, University of Georgia (Athens, GA)
- Veterinary Diagnostic and Investigational Laboratory, University of Georgia (Tifton, GA)
- National Veterinary Services Laboratories (Ames, IA)
- Veterinary Diagnostic Laboratory, Iowa State University (Ames, IA)
- Animal Disease Diagnostic Laboratory, Purdue University (West Lafayette, IN)
- Breathitt Veterinary Center, Murray State University (Hopkinsville, KY)
- Livestock Disease Diagnostic Center, University of Kentucky (Lexington, KY)
- Minnesota Veterinary Diagnostic Laboratory, University of Minnesota (St. Paul, MN)
- Veterinary Medical Diagnostic Laboratory, University of Missouri-Columbia (Columbia, MO)
- Veterinary Diagnostic Center, University of Nebraska-Lincoln (Lincoln, NE)
- Veterinary Diagnostic Services, New Mexico Department of Agriculture (Albuquerque, NM)
- New York State Veterinary Diagnostic Laboratory, Cornell University (Ithaca, NY)
- North Dakota Veterinary Diagnostic Laboratory, North Dakota State University (Fargo, ND)
- Reynoldsburg Laboratory, Ohio Department of Agriculture (Reynoldsburg, OH)
- Oklahoma Animal Disease Diagnostic Laboratory, Oklahoma State University (Stillwater, OK)
- Veterinary Diagnostic Laboratory, Oregon State University (Corvallis, OR)
- Puerto Rico Animal Diagnostic Laboratory (Dorado, PR)
- Clemson Diagnostic Laboratory, Clemson University (Columbia, SC)
- Animal Disease Research and Diagnostic Laboratory, South Dakota State University (Brookings, SD)
- C.E. Kord Animal Disease Diagnostic Laboratory, Tennessee Department of Agriculture (Nashville, TN)
- Pan American Veterinary Laboratories (Austin, TX)
- Texas Veterinary Medical Diagnostic Laboratory, Texas A&M University (College Station, TX)
- Bureau of Laboratory Services, Virginia Department of Agriculture and Consumer Services (Richmond, VA)
- Wisconsin Animal Health Laboratories, Wisconsin Department of Agriculture, Trade and Consumer Protection (Madison, WI)
- Wyoming State Veterinary Laboratory (Laramie, WY)

LabNEWS

This section presents short descriptions of current investigations, outbreaks, news items, or events or articles of potential interest to diagnostic laboratories. The purpose is to provide a forum for timely exchanges of information about veterinary diagnostic laboratory activities. Submissions from nonparticipating laboratories are welcome.

Changes to the Veterinary Diagnostic Laboratory Reporting System (VDLRS) and the DxMONITOR Animal Health Report

The Winter 1995 DxMONITOR Animal Health Report outlined changes to the DxMONITOR and Veterinary Diagnostic Laboratory Reporting System (VDLRS) which were proposed at the 1995 American Association of Veterinary Laboratory Diagnosticians (AAVLD)/U. S. Animal Health Association (USAHA) Convention. The goal of the new reporting system is to have a national measure of the health status of U. S. Livestock. The Summer 1996 DxMONITOR will see implementation of many of those changes.

The first of April a brief questionnaire and an expanded disease list was mailed to veterinary diagnostic laboratories in the U. S. and its territories. The disease list was also mailed to all State Veterinarian's offices. Information from the questionnaire will be used to establish an up-to-date list of which laboratories test for which diseases and their test batteries. This test battery list will be available through the U.S. Department of Agriculture:Animal and Plant Health Inspection Service:Veterinary Services (USDA:APHIS:VS). Clinical disease information from the disease list will be reported in the next quarterly report. Information obtained from the questionnaire and disease list may lead to further revisions of what diseases are reported.

The DxMONITOR will have a new look. Clinical disease data will be collected from laboratories and State Veterinarians on a detected/not-detected basis and reported accordingly. Positive serology alone will be evidence of clinical disease only in specific situations. Conditions currently reported as number positive over number tested will be included in the detected/not-detected category (bovine leukosis, paratuberculosis, equine viral arteritis, porcine reproductive and respiratory syndrome, and *Neospora*). Disease information currently provided by USDA animal disease staffs and other sources will continue to be reported as they have been (tuberculosis, bovine and swine brucellosis, bovine spongiform encephalopathy, pseudorabies, bovine bluetongue, equine infectious anemia, and equine encephalomyelitis).

Contact: Dr. Marty Smith, VDLRS Coordinator, USDA:APHIS:VS, Centers for Epidemiology and Animal Health, Fort Collins, CO, (970) 490-7863.

Eastern Equine Encephalomyelitis (EEE) in Florida (1995)

The number of cases of serologically diagnosed eastern equine encephalomyelitis (EEE) in Florida in 1995 was about 50 percent fewer than the number diagnosed in 1994 (36 versus 68). As in past years, over 75 percent of the cases were diagnosed during the period of May to August. It is interesting to note that significant EEE titers were demonstrated in two wild bears, a macaw, and a pigeon.

During 1995, EEE virus was isolated from three emus, two psittacines, a pigeon, and a horse.

Contact: Dr. Harvey Rubin, Director, Bureau of Diagnostic Laboratories, Florida Department of Agriculture, Kissimmee, FL (407) 846-5200.

Bovine Virus Diarrhea Virus Type 2 Outbreak in Wisconsin

Bovine virus diarrhea virus (BVDV) infection has recently been confirmed in six Wisconsin dairy herds where the case fatality rate was at least 20 percent. The isolates from the six herds have been genotyped and found to be BVDV type 2. Polymerase chain reaction (PCR) typing by Dr. Steve Bolin at the USDA:Agricultural Research Service: National Animal Disease Center (USDA:ARS:NADC), in Ames, Iowa, confirmed that all six BVDV strains are identical and the same strain of BVDV that afflicted Ontario, Canada, in 1993.

All six Wisconsin herds had recently purchased herd replacements prior to the outbreak and were inadequately vaccinated for BVDV. Clinical signs included high fevers of greater than 105° F, anorexia, decreased milk production, pneumonia, and diarrhea in some of the animals. All six herds had a number of abortions or the birth of weak or stillborn calves after the outbreak.

Contact: Dr. Don Sockett, Wisconsin Animal Health Laboratory, Madison, WI, (608) 266-2465.

Summary of the Vesicular Stomatitis Virus-New Jersey (VSV-NJ) Outbreak in the Western U.S.

The recent outbreak of Vesicular Stomatitis Virus-New Jersey (VSV-NJ) began in mid-May 1995 with the first case identified in southern New Mexico. The last confirmed case was reported to the USDA:Animal and Plant Health Inspection Service (APHIS) on November 30, 1995, and the outbreak was declared over on January 15, 1996.

Vesicular stomatitis is a viral disease that can affect horses, cattle, and other ruminants. It results in the development of blisters in the mouth, and on the hooves and teats of affected livestock. These blisters swell and rupture, leaving raw tissue that causes affected animals to become lame and to refuse food and water. VSV is also of concern because its symptoms are similar to those of foot-and-mouth disease, a devastating foreign animal disease. The last occurrence of VSV in the southwestern U.S. was in 1985.

Table 1 gives the summary statistics for the 1995 outbreak.

Table 1. 1995 VSV-NJ Outbreak Summary Statistics

State	Number of Investigations	Number of Positive Premises	Last Quarantine Release Date
AZ	30	1	Aug 7, 1995
CO	327	165	Dec 31, 1995
NM	333	186	Dec 1, 1995
TX	119	1	Aug 28, 1995
UT	55	6	Dec 13, 1995
WY	26	8	Dec 4, 1995
Other	272	0	
Total	1162	367	

Figure 1 shows the cumulative county location of premises with at least one confirmed case of VSV-NJ during the outbreak. Figure 2 shows the epidemic curve for the 1995 outbreak. Cases in Figure 2 are positive premises. Week 22 is the week beginning May 28, 1995.

There are currently no interstate movement restrictions due to VSV in place. State requirements are available via the Regulation Retrieval System or the Voice Response System (1-800-545-USDA), and are kept as current as possible. There are still some international trade restrictions in place in response to the 1995 VSV outbreak which will be removed by December 31, 1996, at the latest, depending upon the

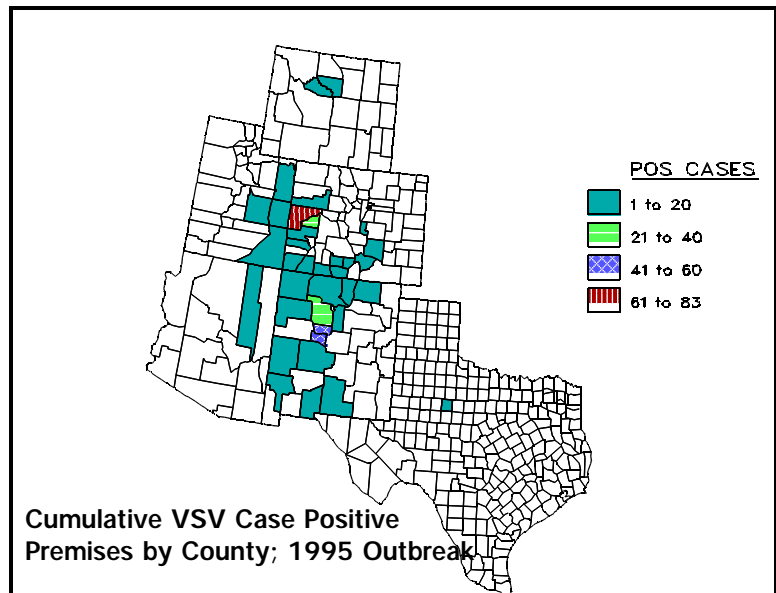


Figure 1

destination country. Certain countries have trade restrictions in place regarding VSV which are not related to the 1995 outbreak, and they are not expected to change in the near future. For detailed information regarding international movement requirements, contact the federal veterinarian in your State or the National Center for Import and Export in Riverdale, Maryland (301-734-8590).

Contact: USDA:APHIS:VS Emergency Programs, Riverdale, MD, (301) 734-8073 or USDA:APHIS:VS Western Regional Office, Englewood, CO, (303) 784-6215.

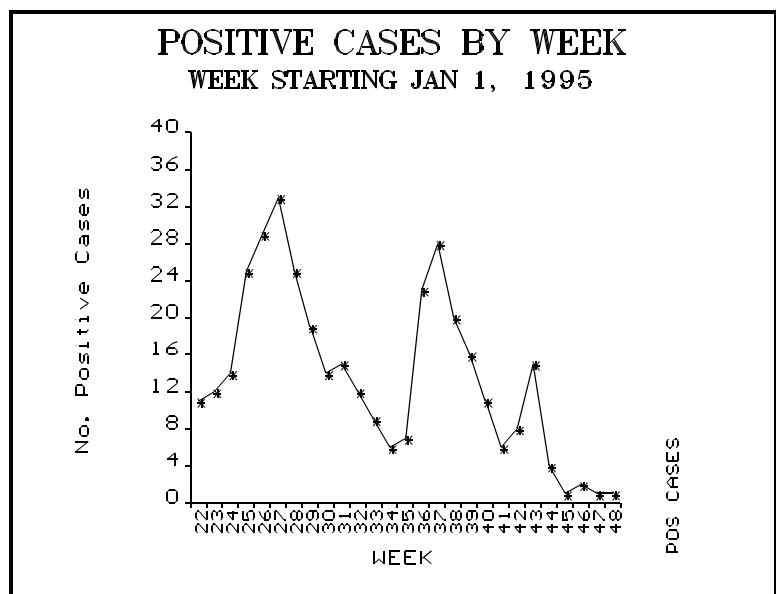


Figure 2

National Veterinary Services Laboratories' (NVSL) Quarterly *Salmonella* Report

This article is excerpted from the National Veterinary Services Laboratories' (NVSL) quarterly *Salmonella* report. This quarterly report summarizes *Salmonella* serotype distribution and frequency data accumulated by the NVSL during the period October 1 through December 31, 1995.

The most common serotype results are included for *Salmonella* cultures from livestock species submitted to the NVSL for identification.

Figures 3 through 8 show the most commonly identified *Salmonella* serotypes of clinical isolates in cattle, swine, and horse herds, and sheep, chicken, and turkey flocks. Clinical isolates are those submitted from animals with primary *Salmonella* infections.

Salmonella serotypes included in the "other" category for cattle, swine, horses, and sheep were all unspecified. "Other" serotypes for chickens included one enteritidis, one braenderup, two schwarzengrund, two senftenberg, two oranienburg, and four unspecified. "Other" serotypes for turkeys included three 18:z4,z32(arizona), three heidelberg, three javiana, two kentucky, one anatum, one putten, and eight unspecified.

Contact: Kathy Ferris, Bacterial Identification Section, USDA:APHIS:VS, National Veterinary Services Laboratories, Ames, IA, (515) 239-8565.

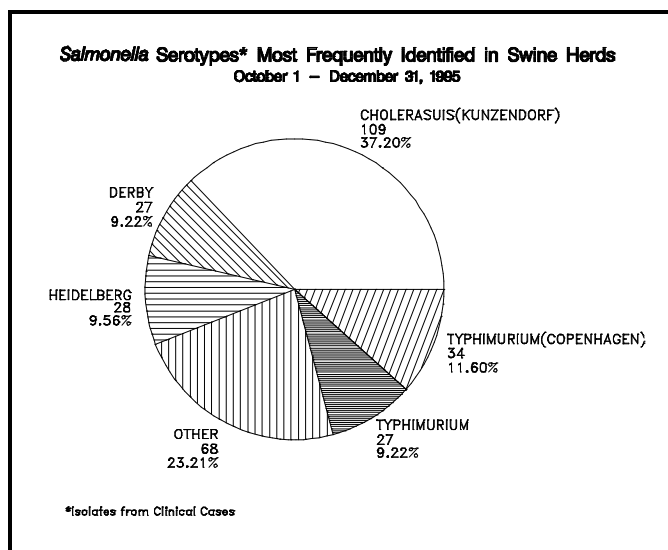


Figure 4

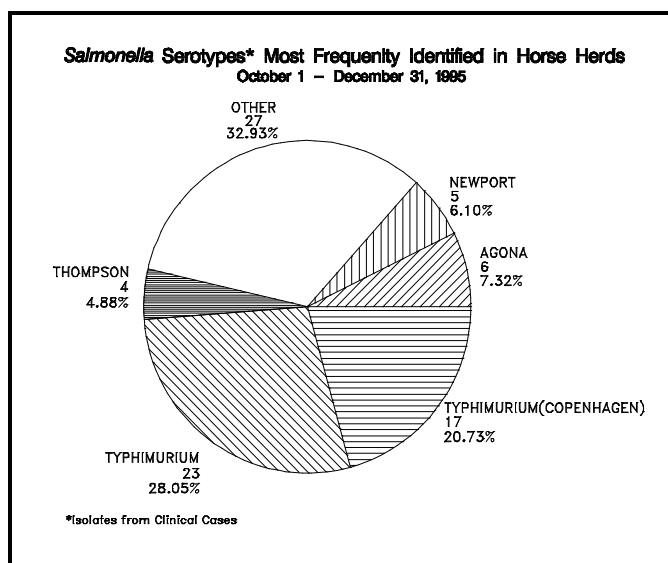


Figure 5

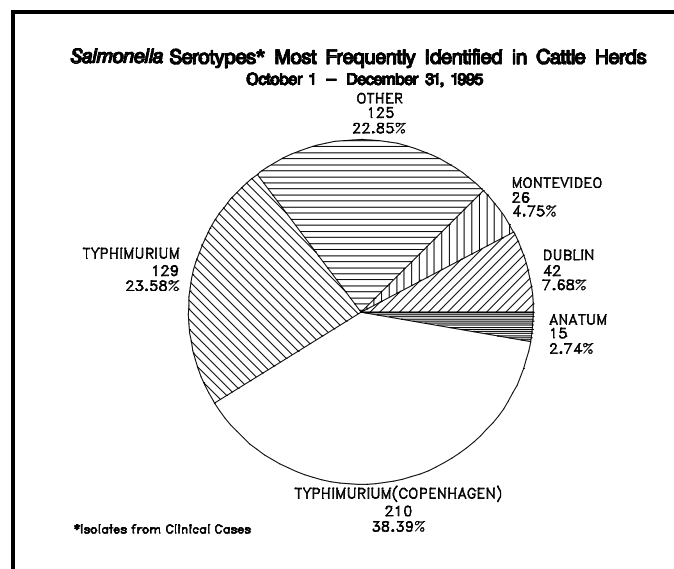


Figure 3

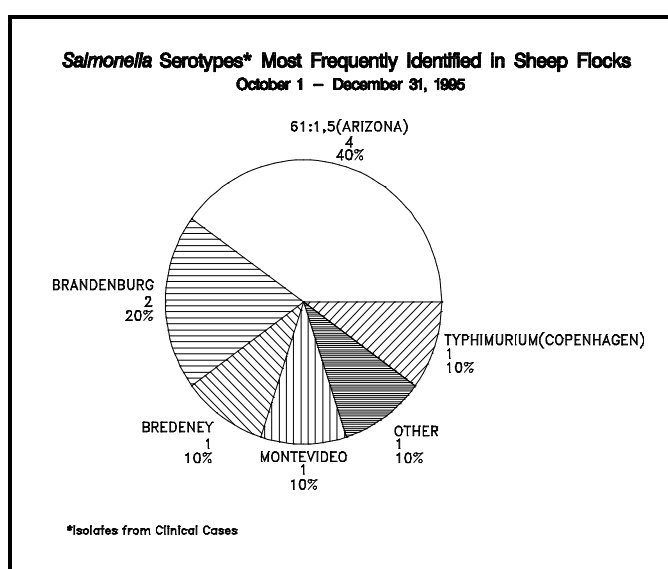


Figure 6

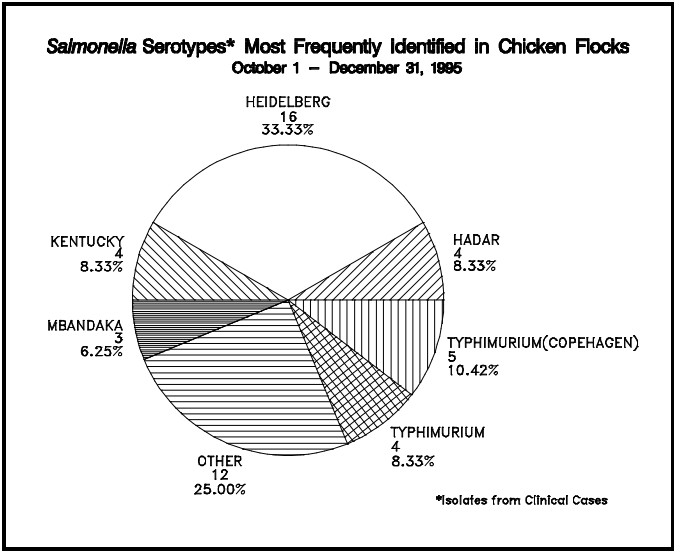


Figure 7

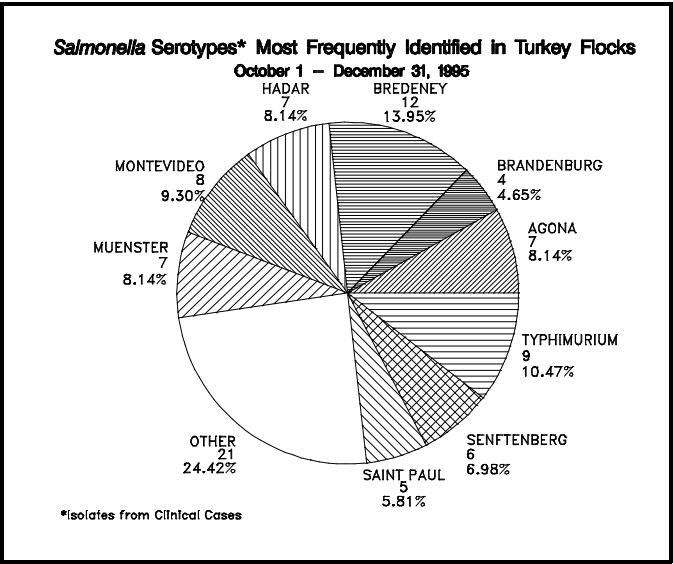


Figure 8

I. Patterns of Selected Diseases

Section I contains information on selected diseases of interest as designated by List B of the Office International des Epizooties (OIE) and other livestock diseases. The purpose of reporting these data is to monitor confirmed cases of specific diseases on a State-by-State or regional basis so that national distributions can be mapped and evaluated.

Bovine Leukosis Virus	6
Paratuberculosis	8
Bovine Brucellosis	10
Bovine Tuberculosis	11
Bovine Spongiform Encephalopathy	12
Bovine Bluetongue Virus	14
Equine Viral Arteritis Virus	15
Equine Infectious Anemia	16
Equine Encephalomyelitis	17
Porcine Reproductive and Respiratory Syndrome Virus . . .	18
Swine Brucellosis	20
Pseudorabies Virus	not reported this quarter

Key to Figures in this Section:

- Deviation bar charts show the base 2 logarithmic transformation of the ratio of positive tests for the current quarter to the mean of positive tests for the previous four quarters. A value of '0' is equivalent to a ratio of '1', indicating no change compared to historical values. Each unit change indicates a doubling (positive change) or halving (negative change) of the present value compared to the mean of the historical values.

- Maps present data in two manners. Maps of federally regulated conditions show numbers of herds. Maps of conditions reported by participating laboratories show total number of positive tests over total number of tests run, per State, for the current and previous quarter.

- In some cases, the denominator is a minimum because some laboratories were not able to determine the total number of negative tests performed.

- Data are presented by region or State of specimen origin and quarter of the calendar year for specimen submission.

- Results reported with dates not corresponding to the current quarter are the result of different testing intervals or related to different reporting times.

- See map on inside front cover for regions.

- Test abbreviations used in this section:

AGID = Agar gel immunodiffusion

ELISA = Enzyme linked immunosorbent assay

CF = Complement fixation

IFA = Indirect fluorescent antibody

□ Bovine Leukosis Virus (BLV)

Criteria: AGID or pathology.

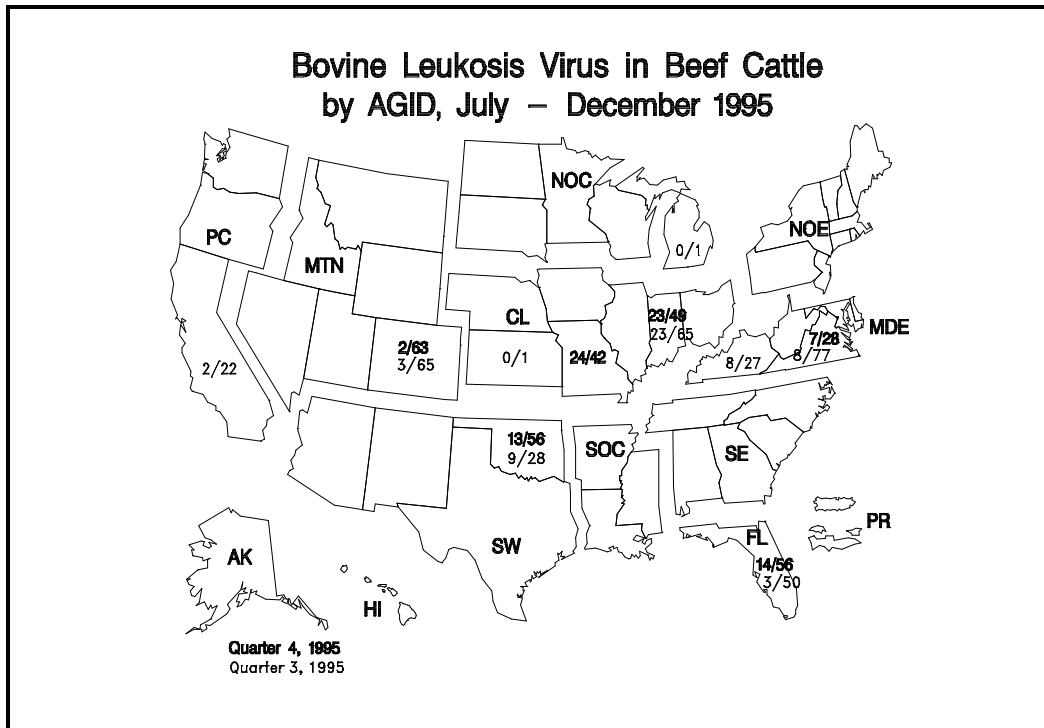


Figure 9

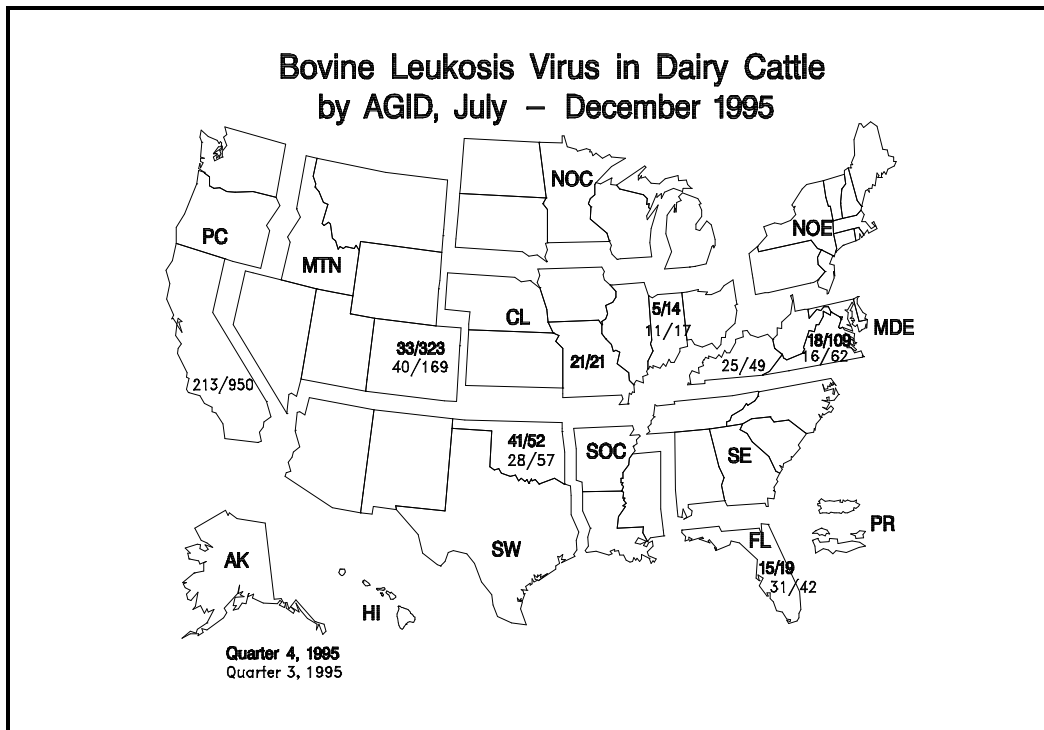


Figure 10

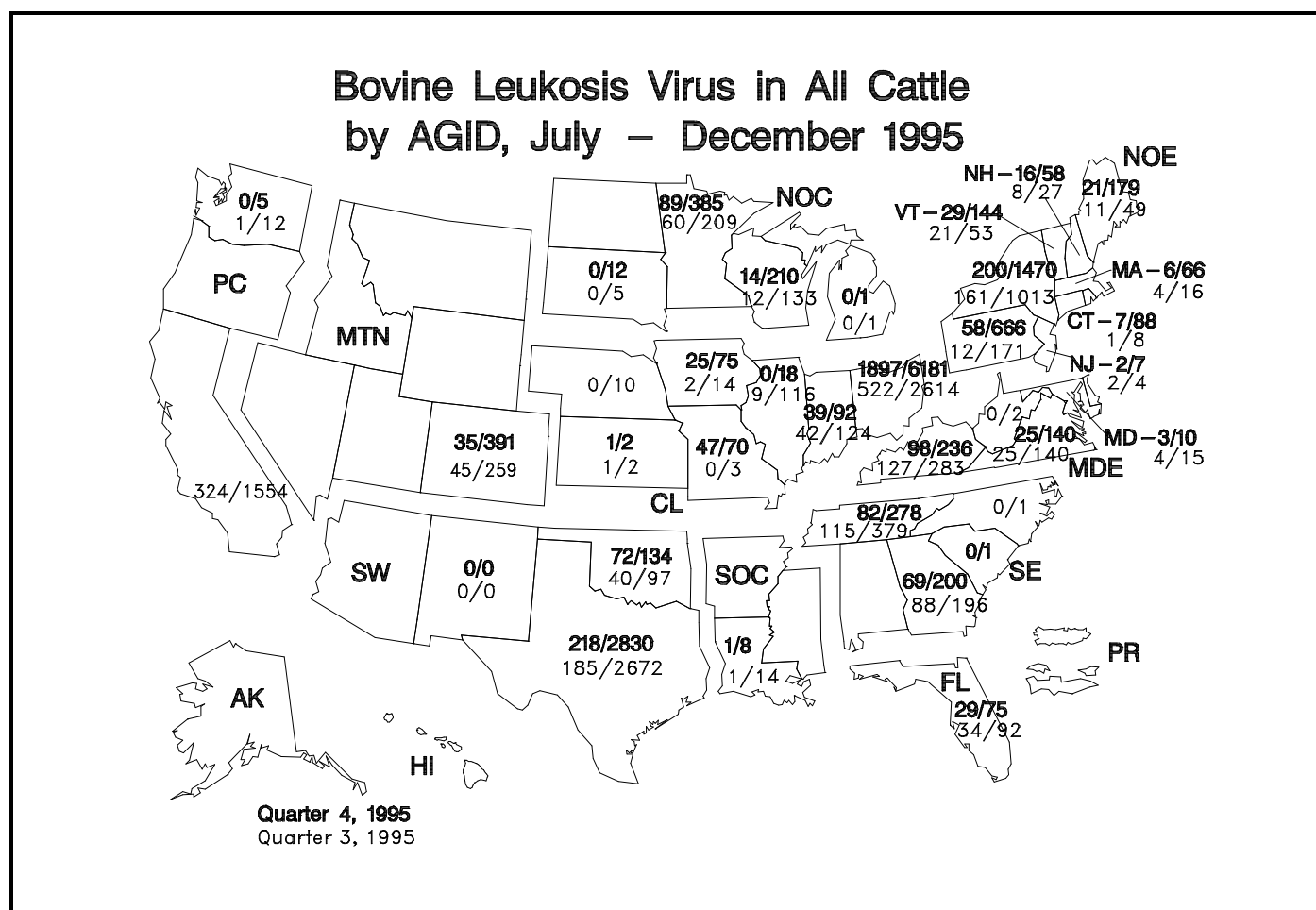


Figure 11

For the fourth quarter of 1995 (October through December), there were a total of 3,083/14,032 (22.0 percent) positive AGID tests reported for bovine leukosis virus (BLV), compared to 1,857/10,288 (18.1 percent) for the third quarter of 1995 and 1,923/10,414 (18.5 percent) for the fourth quarter of 1995. Figures 9 through 11 show the distribution of AGID test results for BLV for the third and fourth quarters of 1995 in beef, dairy, and all cattle by State. Figure 11 includes results where the class was unknown.

Figure 12 shows the ratio of total AGID positives for the fourth quarter of 1995 compared to the average total AGID positives for the previous four quarters by region. The Pacific region (not shown) reported zero positive for the current quarter compared to an average of 142 positive for the previous four quarters.

In addition to the AGID results reported above, Georgia and Missouri each reported one positive by histopathology.

NOTE: States with no values are nonreporting States.

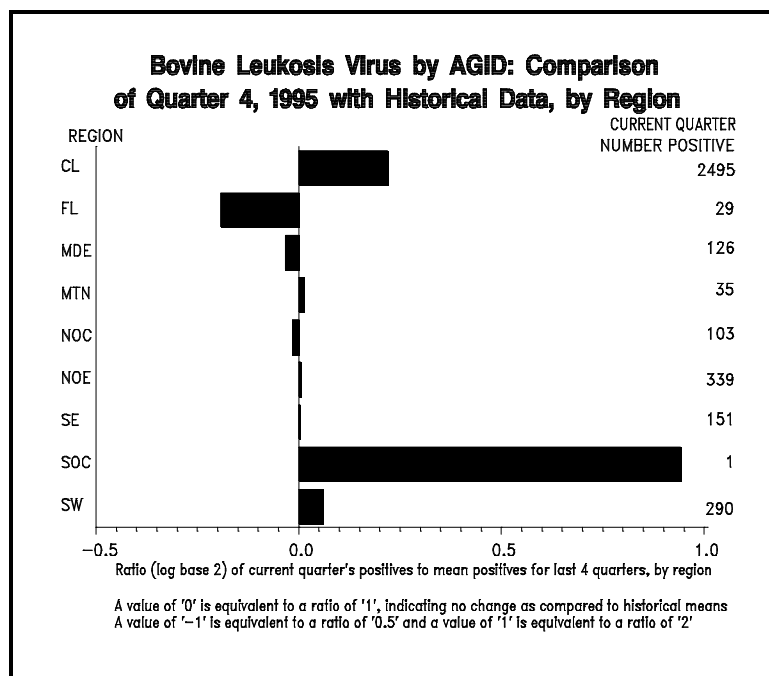


Figure 12

REGION	CURRENT QUARTER NUMBER POSITIVE	Ratio (log base 2)
CL	133	~0.02
FL	22	~0.10
MDE	28	~0.30
MTN	2	~0.40
NOC	111	~0.05
NOE	107	~-0.10
SE	1	~-0.40
SOC	0	0.00

Ratio (log base 2) of current quarter's positives to mean positives for last 4 quarters, by region

A value of '0' is equivalent to a ratio of '1', indicating no change as compared to historical means
A value of '-1' is equivalent to a ratio of '0.5' and a value of '1' is equivalent to a ratio of '2'

**Evidence of *M. paratuberculosis* by Serology
Comparison of Quarter 4, 1995
with Historical Data, by Region**

REGION

CURRENT QUARTER
NUMBER POSITIVE

REGION	CURRENT QUARTER NUMBER POSITIVE	Ratio (log base 2)
CL	789	~0.15
MDE	25	~-0.1
NOC	267	~0.05
NOE	97	~0.02
SE	30	~0.1
SW	20	~0.35

Ratio (log base 2) of current quarter's positives to mean positives for last 4 quarters, by region

A value of '0' is equivalent to a ratio of '1', indicating no change as compared to historical means
A value of '-1' is equivalent to a ratio of '0.5' and a value of '1' is equivalent to a ratio of '2'

Bovine Paratuberculosis
by Culture, DNA Probe, or Histopathology
April – September 1995

Quarter 3, 1995
Quarter 2, 1995

Region	Quarter 3, 1995	Quarter 2, 1995
PC	1/1	0/4
MTN	0/2	0/4
AK	1/183	2/52
SW	1/2	0/2
CL	1/2	1/2
SOC	1/1	
SE	1/2	3/3
FL	126/1006	178/1646
PR	1/1	4/5
NOC	93/299	81/151
NH	2/20	2/2
VT	0/8	3/9
MA	0/1	1/1
NJ	0/1	
MD	4/108	
MDE	27/78	6/66
NOE	0/1	

8 - DxMONITOR (Spring 1996)

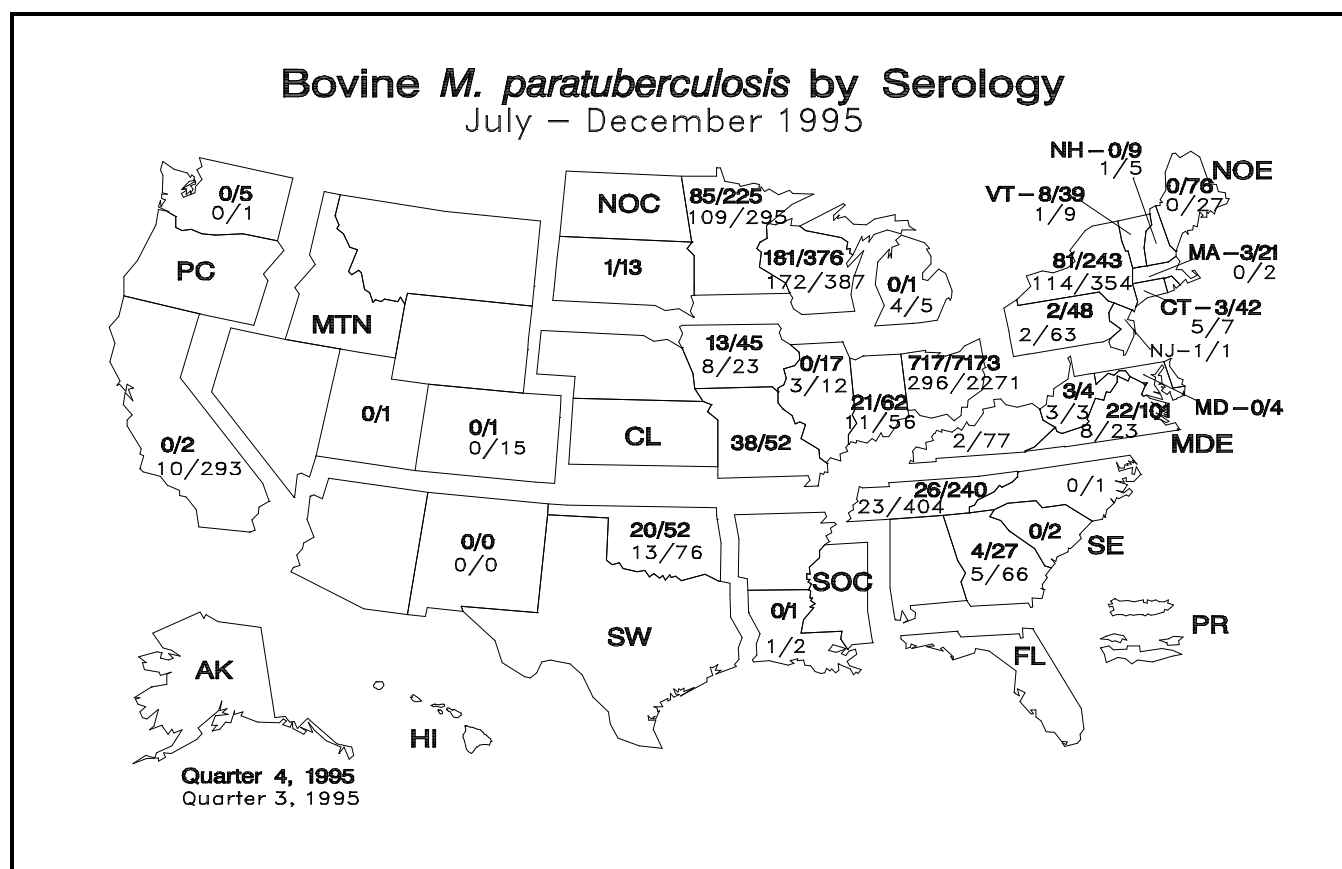


Figure 16

Bovine: Figure 13 shows the ratios of positives for the third quarter of 1995 compared to the average number of positives for the previous four quarters. Data represent paratuberculosis culture, DNA probe, and histopathology, by region. Ratios for paratuberculosis serology positives for the fourth quarter of 1995 compared to the previous four quarters are shown in Figure 14. The Mountain region (not shown) reported zero positive for the current quarter compared to an average of one for the previous four quarters. The Pacific region (not shown) reported zero positive compared to an average of seven, and the South Central region (not shown) reported zero positive compared to an average of 0.67.

Figure 15 shows culture, DNA probe, and histopathology results for bovine paratuberculosis for the second and third quarters of 1995, by State. Positives for the third quarter of 1995 were 404/2,483 (16.3 percent).

Figure 16 shows the serology results for bovine paratuberculosis for the third and fourth quarters of 1995, by State. Positives for the fourth quarter of 1995 were 1,228/8,882 (13.8 percent).

Caprine: For the third quarter of 1995, one out of 17 (5.9 percent) caprine paratuberculosis cultures, DNA probes, and histopathology tests were positive. Wisconsin reported the positive test result. For the fourth quarter of 1995, seven out of 95 (7.4 percent) caprine serology tests were positive. Connecticut (3), Georgia (1), New York (2), and Pennsylvania (1) reported positive test results.

Ovine: For the third quarter of 1995, one out of six (16.7 percent) ovine paratuberculosis cultures, DNA probes, and histopathology tests were positive. New York reported the positive test result. For the fourth quarter of 1995, three out of 126 ovine serology tests were positive (2.4 percent). Oklahoma reported all three positive test results.

Other: Culture results for nontraditional species reported for the third quarter of 1995 were negative for 14 elk (Colorado and Missouri), negative for one deer (Virginia), negative for two rhinoceros (Missouri), negative for one monkey (Illinois), and positive for one of 48 miscellaneous species (Ohio). DNA probe results for the fourth quarter of 1995 were negative for 42 zoo ruminants (Florida).

NOTE: States with no values are nonreporting States.

□ Bovine Brucellosis

Source: Dr. Mike Gilsdorf
USDA:APHIS:VS
Cattle Diseases Staff
(301) 734-8711

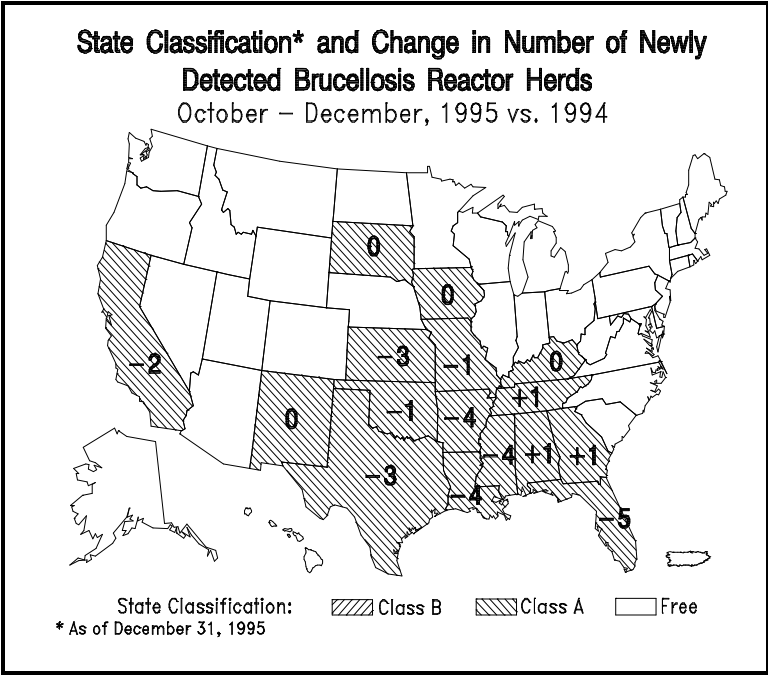


Figure 17

during

Reactor herd = Herd with at least one case of brucellosis confirmed by serology or culture.

Definition of State Classifications:

Class B: More than 0.25 percent, but less than 1.5 percent of all herds infected.

Class A: No more than 0.25 percent of all herds infected.

Free: No infected herds under quarantine during the past 12 months.

There were no Class B States for bovine brucellosis at the time of release of this report. Alabama, Georgia, and Tennessee had increased numbers of newly detected bovine brucellosis herds between October 1 and December 31, 1995 compared to the same period in 1994. Arkansas, California, Florida, Kansas, Louisiana, Mississippi, Missouri, Oklahoma, and Texas had decreased numbers (Figure 17).

For the entire U.S., there were 42 newly detected bovine brucellosis reactor herds from October through December 1995 (Figure 18), 21 more herds than were newly identified from July through September 1995.

The 42 brucellosis reactor herds detected in the fourth quarter of 1995 were 24 fewer than were detected

the same quarter of 1994 (Figure 19).

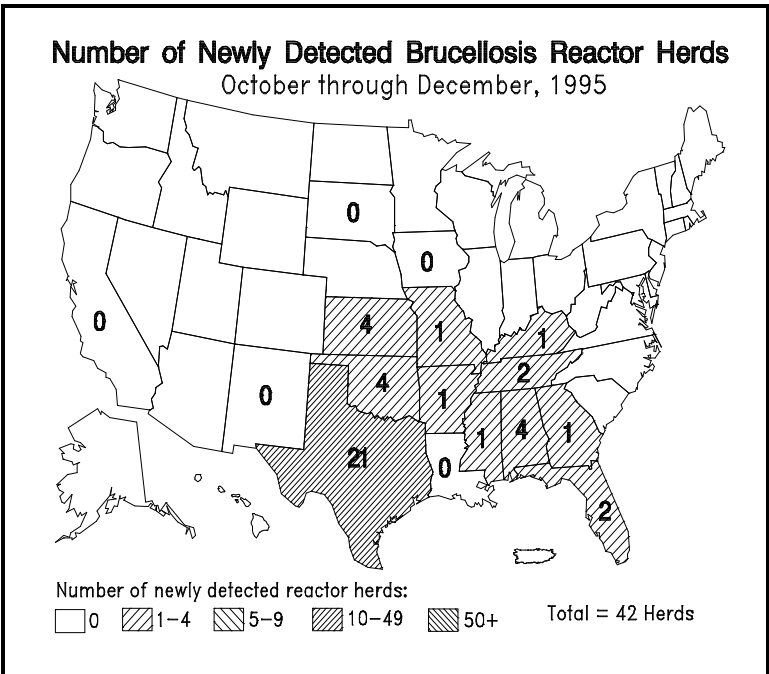


Figure 18

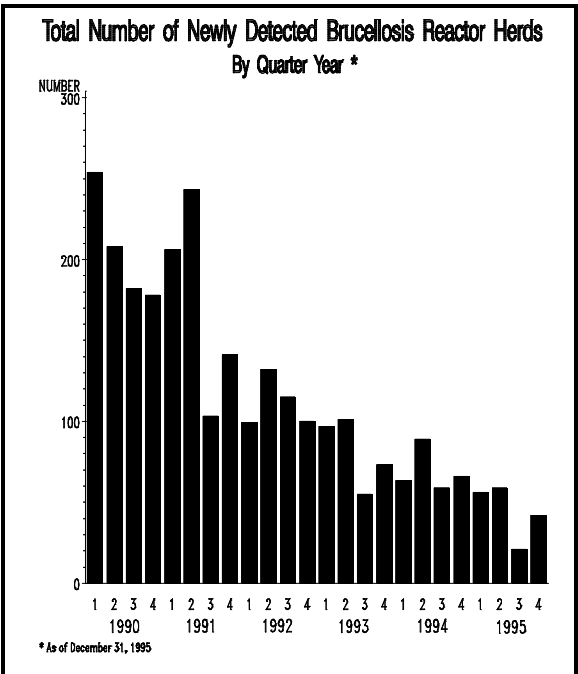


Figure 19

□ Bovine Tuberculosis

Source: Dr. J.S. VanTiem
 USDA:APHIS:VS
 Cattle Diseases Staff
 (301) 734-8715

Infected = Laboratory confirmed existence of
Mycobacterium bovis.

State Classifications:

Modified Accredited: Testing and Slaughter Surveillance Programs in effect.

Accredited Free: Testing and Slaughter Surveillance Programs have identified no infected bovines for 5 or more years.

Five cattle or bison herds were identified as being infected with bovine tuberculosis during the fourth quarter of 1995 (October - December, 1995, Figure 20). Wisconsin's accredited free status was suspended on December 8, 1995.

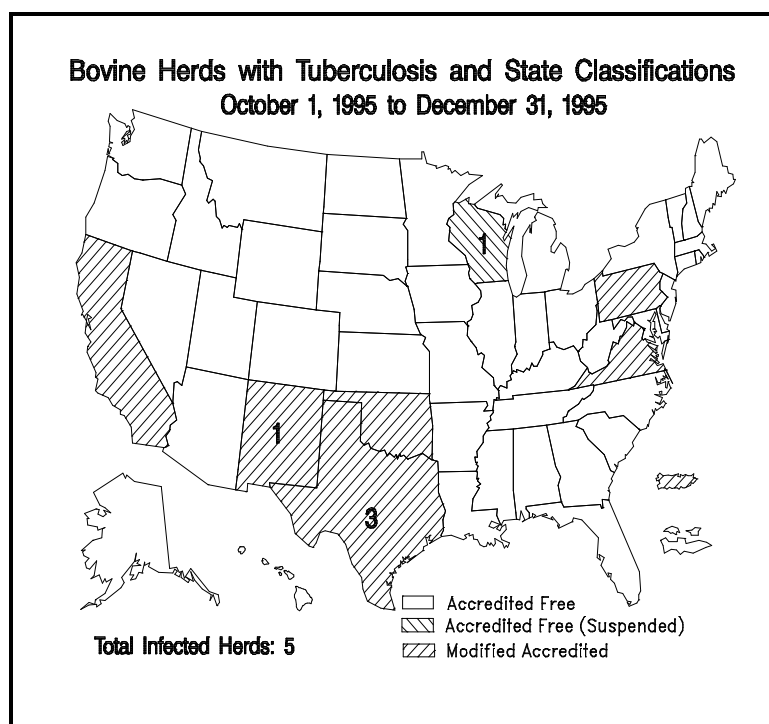


Figure 20

Five cervidae herds were identified as infected with bovine tuberculosis during the fourth quarter of 1995 (October - December, 1995, Figure 21).

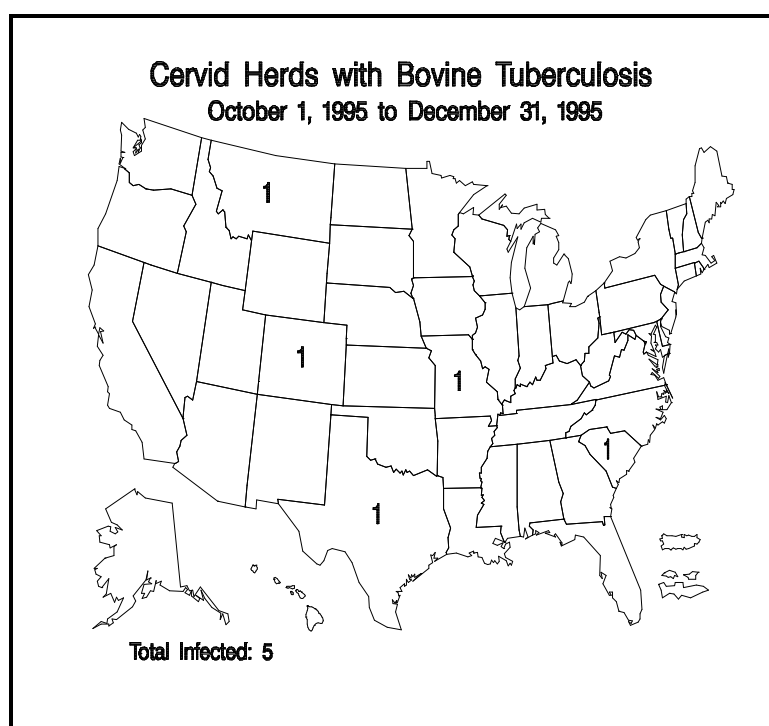


Figure 21

□ Bovine Spongiform Encephalopathy (BSE)

United States Surveillance:

Source: Dr. Art Davis
 USDA:APHIS:VS
 National Veterinary Services
 Laboratories, Diagnostic Pathobiology
 Laboratory
 (515) 239-8521

Surveillance for bovine spongiform encephalopathy (BSE) in the United States continues with an additional 163 brains received by the National Veterinary Services Laboratories (NVSL) for examination from December 1, 1995 through March 31, 1996 (Figure 22). This brings the total number of examined brains reported by NVSL to 2,795, as of March 31, 1996.

No evidence of BSE has been found in any U.S. cattle.

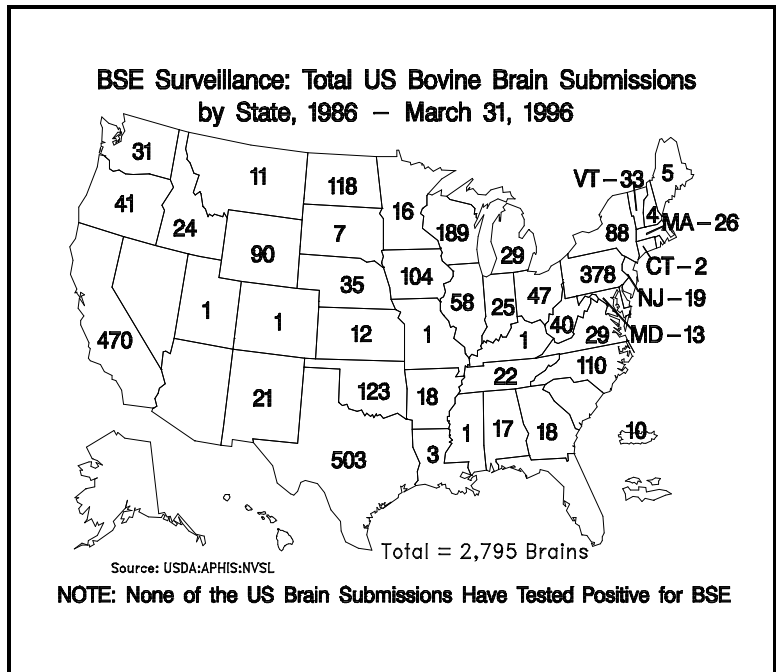


Figure 22

United Kingdom Update:

Source: Dr. J. Wilesmith, Great Britain

Great Britain reported 2,891 newly confirmed cases of BSE with 274 more herds affected between December 1, 1995 and March 1, 1996 (Table 2). The epidemic curve (Figure 23) indicates that the epidemic continues to decline.

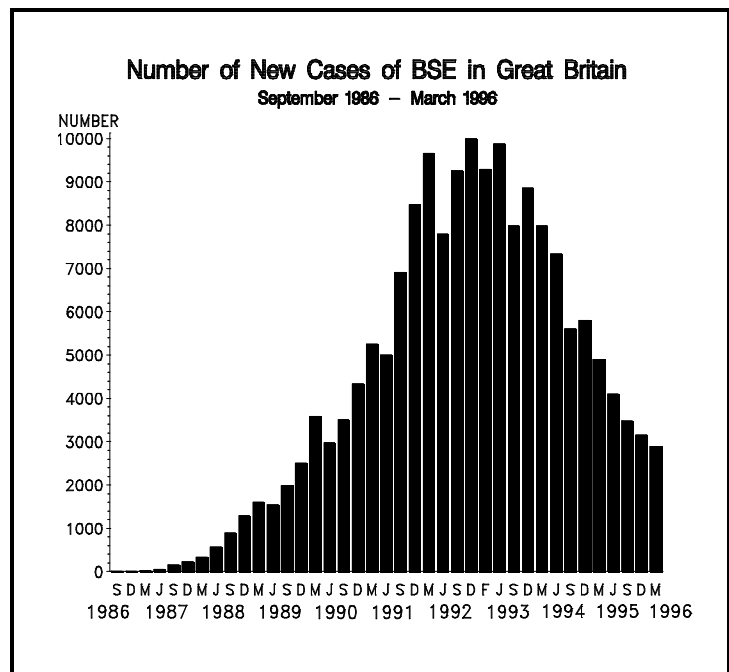
Bovine Spongiform Encephalopathy Descriptive Epidemiology Statistics for Great Britain* As of March 1, 1996

Total number of confirmed cases:	158,512
Total number of affected herds:	33,265
Proportion of dairy herds affected:	59.2%
Proportion of beef suckler herds affected:	15.3%

* England, Scotland, Wales

Data provided by Great Britain.

Table 2



Other BSE Affected Countries:

Sources: Dr. T. Chillaud, Office International des Epizooties
Dr. G. O. Denny, Northern Ireland

Northern Ireland reported an additional 34 cases in native cattle between December 4, 1995, and March 1, 1996. The Republic of Ireland reported one additional case in native cattle between March 31 and August 1995. Switzerland reported 37 additional cases in native cattle between November 17, 1995, and February 29, 1996. Portugal reported three additional cases of BSE in native cattle between October 30, 1995, and January 24, 1996. France reported one additional case in native cattle between December 1, 1995, and March 1, 1996 (Table 3). No additional reports of cases of BSE imported from the United Kingdom or other countries with endemic BSE were recorded since the last reporting period.

BSE Cases¹ Worldwide Other Than Great Britain as of March 1, 1996											
Country ²	1987 +before	1988	1989	1990	1991	1992	1993	1994	1995	1996	Total
Guernsey	4	34	52	83	75	92	115	69	---	---	524
Northern Ireland	0	3	30	100	170	333	487	363	156	34	1676
Jersey	0	1	4	8	14	23	37	22	---	---	109
Isle of Man	0		6	6	22	67	109	110	55	---	---
375 Republic of Ireland	0	0	15	14	17	18	16	19	4 ³	---	103
Switzerland	0	0	0	2	8	15	29	64	85	14 ³	217
Portugal	0	0	0	1 ⁴	1 ⁴	1 ⁴	3 ⁴	12	14	2 ³	34
France	0	0	0	0	5	0	1	4	3	---	13

Countries with imported cases only:

Germany: 4 cases (02/92, 02/94, 04/94, 05/94)	Falkland Islands: 1 case (1989)
Canada: 1 case (11/93)	Italy: 2 cases (10/94)
Denmark: 1 case (07/92)	Oman: 2 cases (1989)

1. Cases in native cattle and cattle imported from the U.K. or another country with endemic BSE.
2. In order of first reported case/diagnosis.
3. Data for Switzerland as of February 29, 1996; data for Portugal as of January 24, 1996; data for the Republic of Ireland as of August 1995.
4. Imported cases.

Data provided by Office International des Epizooties and Northern Ireland.

Table 3

□ Bovine Bluetongue (BT) Virus

Source: Dr. A. D. Alstad
 USDA:APHIS:VS
 National Veterinary Services Laboratories,
 Diagnostic Virology Laboratory
 (515) 239-8551

The 1995/1996 bluetongue (BT) serologic survey of 18 northeastern and north central States, plus Alaska and Hawaii was conducted from October 16 through December 8, 1995. The States were combined into 13 geographic areas. The survey utilized the competitive enzyme-linked immunosorbent assay (C-ELISA) test. C-ELISA positive samples were further tested by the neutralization test (NT) against the BT and epizootic hemorrhagic disease (EHD) viruses found in the U. S.

A total of 8,156 slaughter samples were tested, of which 32 (0.4 percent) were C-ELISA positive (Figure 24). None of the 13 geographic areas sampled had greater than 1.0 percent C-ELISA positive samples. Massachusetts, when considered alone, had 1.5 percent of its samples positive (1/65), but when combined with the rest of the States in its geographic area, the percent positive dropped to 0.2 (1/614). Indiana, North Dakota, Ohio, and West Virginia each had 0.7 percent of their C-ELISA tests positive, while Maryland/Delaware and Pennsylvania/New Jersey each had 0.8 percent positive. All other areas had 0.2 percent positive samples or less. Minnesota and New York had no positive samples.

Eight of the 32 C-ELISA positive samples were positive for neutralizing antibodies against BT only by the neutralization test (Table 4). No C-ELISA positive samples had neutralizing antibody against EHD alone, while 17 had antibodies against BT and EHD. The remaining seven C-ELISA positive samples were negative for neutralizing antibody against BT and EHD.

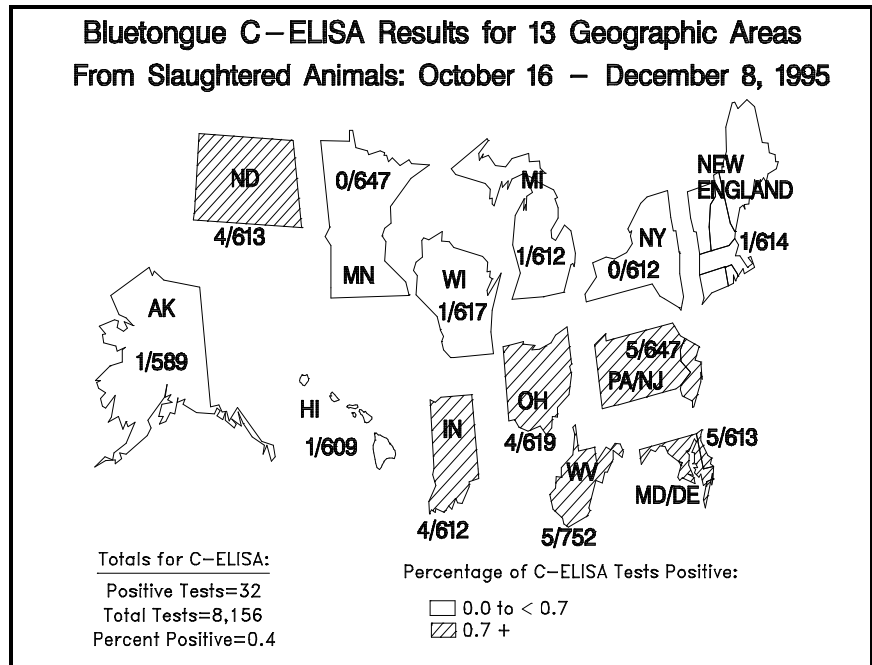


Figure 24

Bluetongue NT Results on the 32 C-ELISA Positive Samples					
<u>State</u>	<u>C-ELISA</u>		<u>Neutralization Test</u>		
	<u>Positive</u>	<u>BT</u>	<u>EHD</u>	<u>BT&EHD</u>	<u>Negative</u>
Alaska	1	0	0	0	1
Connecticut	0	0	0	0	0
Delaware	1	0	0	0	1
Hawaii	1	1	0	0	0
Indiana	4	0	0	4	0
Maine	0	0	0	0	0
Maryland	4	0	0	3	1
Massachusetts	1	0	0	0	1
Michigan	1	0	0	1	0
Minnesota	0	0	0	0	0
New Hampshire	0	0	0	0	0
New Jersey	1	0	0	0	1
New York	0	0	0	0	0
North Dakota	4	0	0	4	0
Ohio	4	3	0	1	0
Pennsylvania	4	0	0	2	2
Rhode Island	0	0	0	0	0
Vermont	0	0	0	0	0
West Virginia	5	3	0	2	0
<u>Wisconsin</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	32	8	0	17	7

Table 4

□ Equine Viral Arteritis (EVA) Virus

Criteria: Virus neutralization (>1:4 titer) and no history of vaccination or virus isolation from tissue or semen.

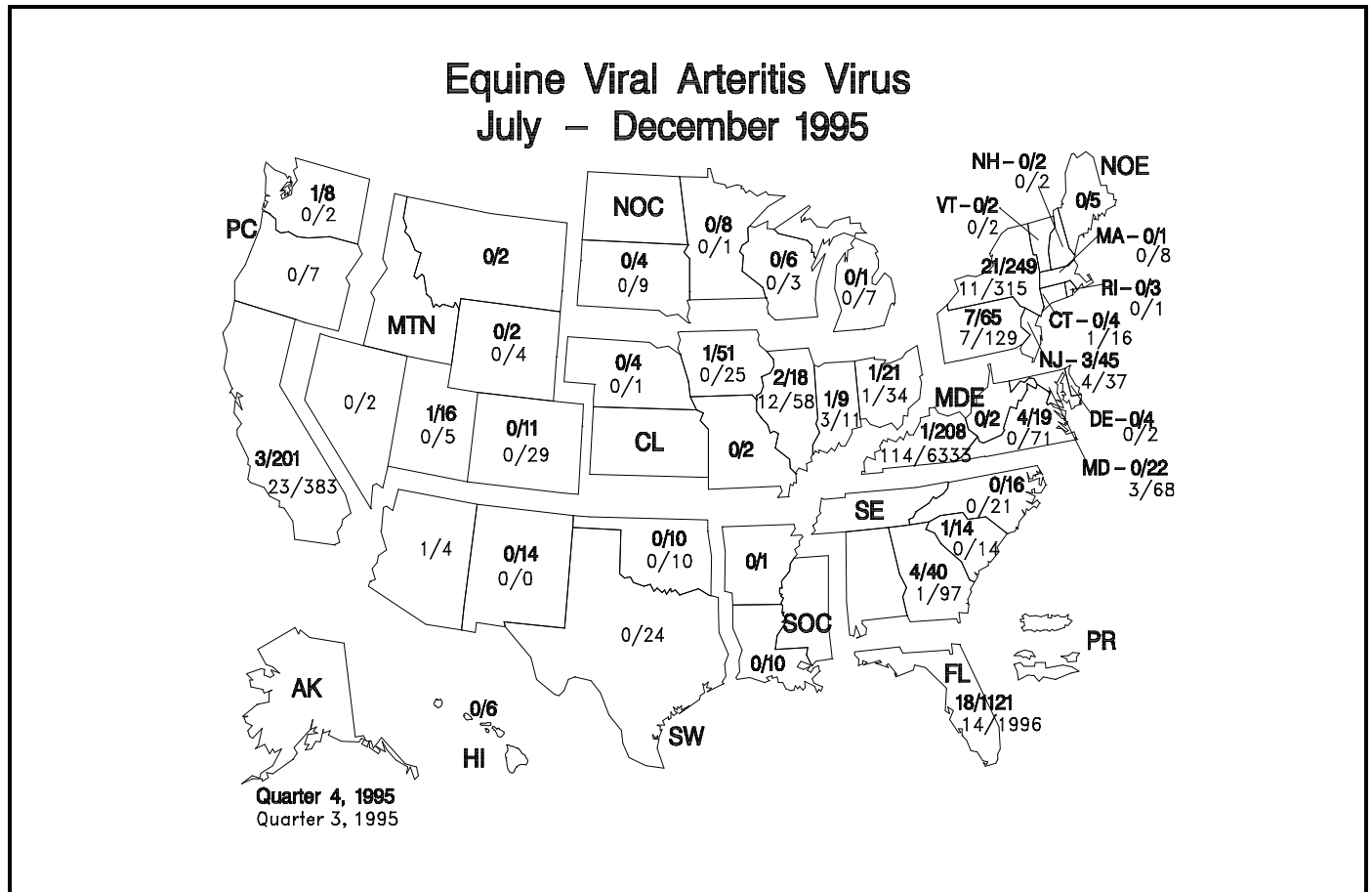


Figure 25

For all regions combined, 69 positives (3.1 percent of the 2,227 tests) for equine viral arteritis (EVA) virus were reported for the fourth quarter of 1995 (Figure 25).

Figure 26 shows the ratio of the number positive for the fourth quarter of 1995 compared to the previous four quarters. Results were reported for Hawaii for the first time with zero positive. Both the North Central and Southwestern regions (not shown) reported zero positive compared to averages of 0.5.

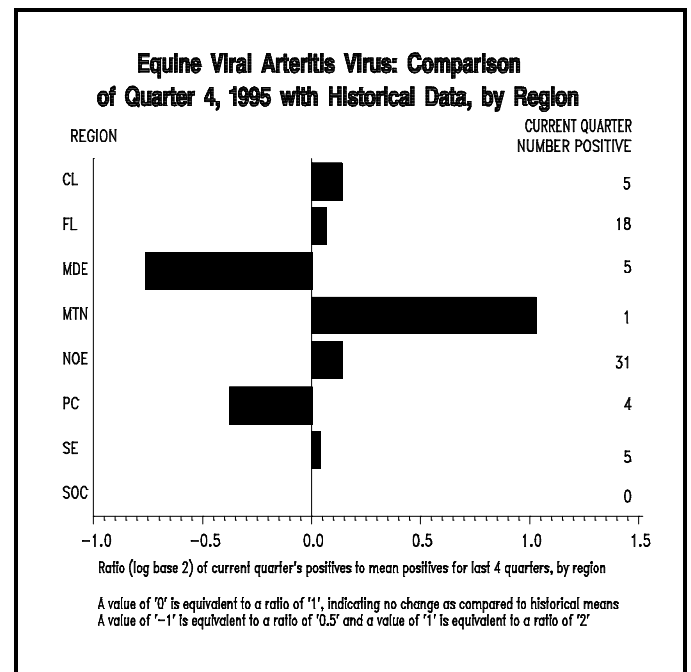


Figure 26

NOTE: States with no values are nonreporting states.

□ Equine Infectious Anemia (EIA)

Source: Dr. Tim Cordes
USDA:APHIS:VS
Equine Diseases
(301) 734-6954

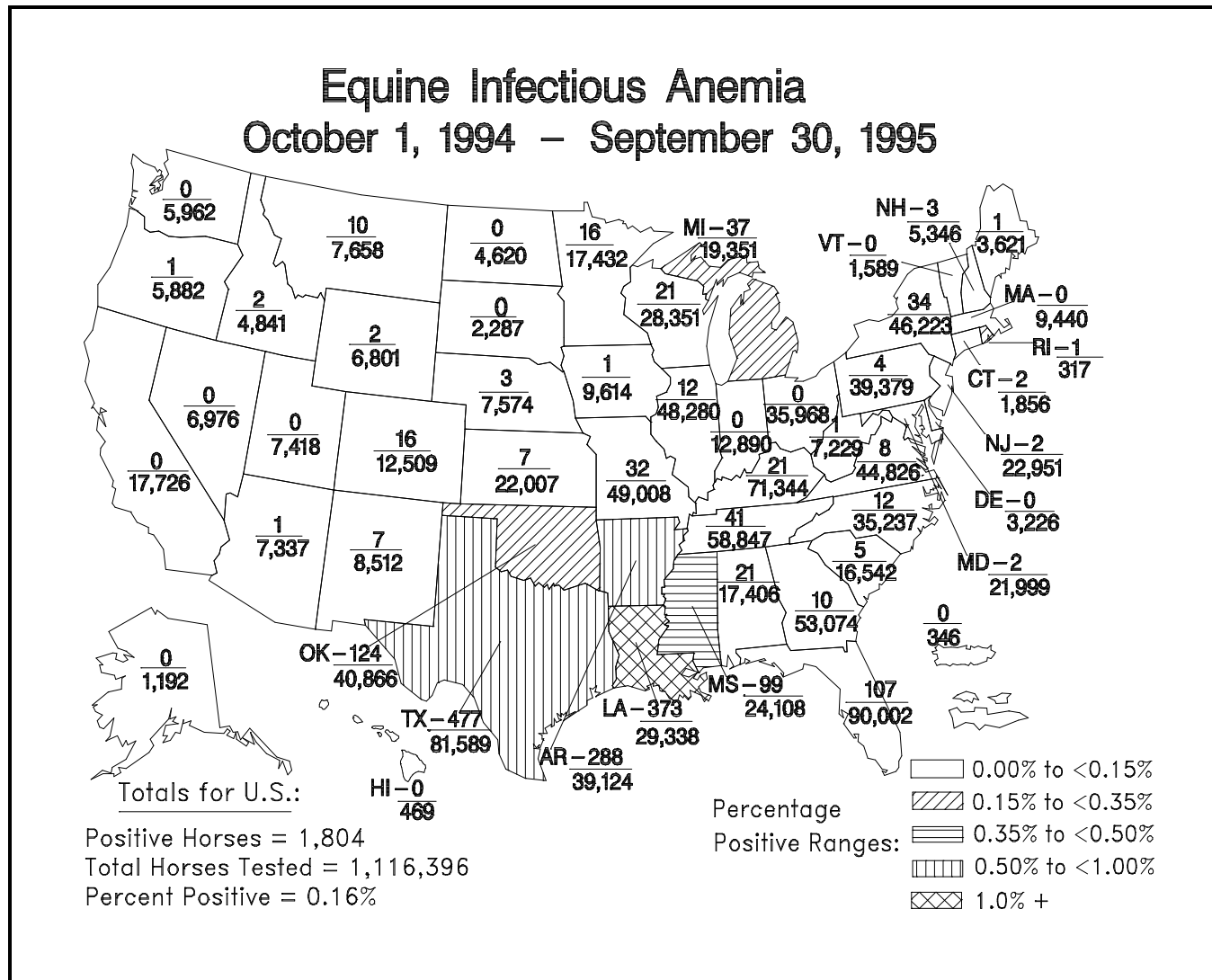


Figure 27

Figure 27 shows the results of equine infectious anemia (EIA) testing from October 1, 1994 through September 30, 1995. In previous years, the EIA results were reported as the number of positive tests out of the total number of tests conducted. This year, the results are the number of positive horses out of the number of horses tested. The number of positive horses will be fewer than the number of positive tests because of repeat testing of some animals. Comparison of this year's numbers with previous years should be done with caution.

Caution should be used in interpreting the EIA results. Testing for EIA is performed primarily to comply with regulations on the movement of horses. These regulations may vary from one State to another and what is reported here does not necessarily reflect the status of horses that have not moved.

□ Equine Encephalomyelitis

Source: Dr. A. D. Alstad
 USDA:APHIS:VS
 National Veterinary Services Laboratories
 Diagnostic Virology Laboratory
 (515) 239-8551

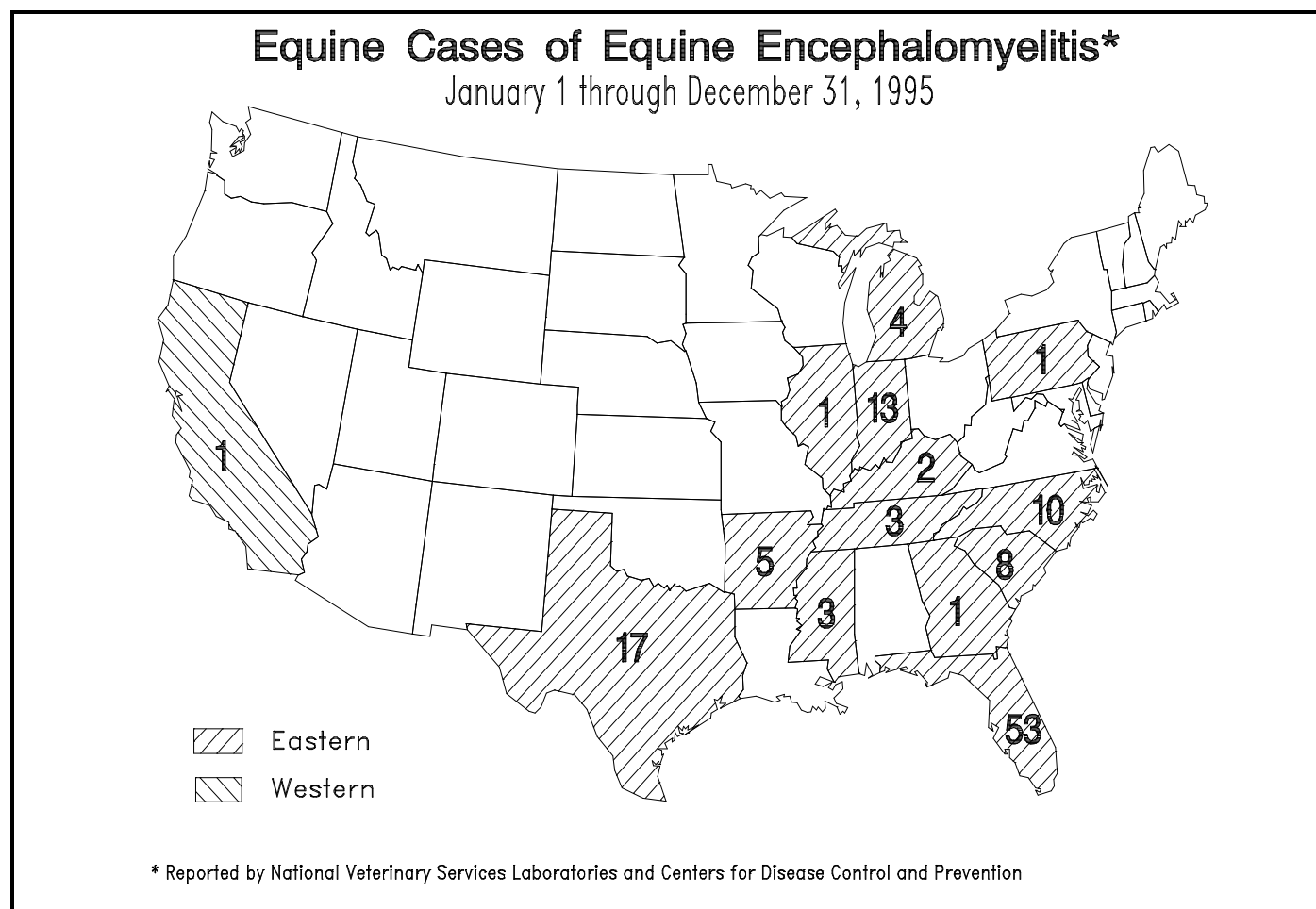


Figure 28

From January 1 through December 31, 1995, specimens from 219 equine, 55 avian (the majority of which were ratites), and two other species were tested for equine encephalomyelitis at the National Veterinary Services Laboratories (NVSL). Thirty-nine equine and seven emu tested positive for eastern equine encephalomyelitis (EEE), and one horse tested positive for western equine encephalomyelitis (WEE) at the NVSL for the year. The NVSL also reported one EEE positive submission from Panama.

During the same time period, there were 82 additional cases of EEE in equine, seven in emu, five in black bears, and one each in a parrot, crane, rhea, ostrich, and dog reported to the Centers for Disease Control and Prevention (CDC) from public health and State diagnostic laboratories.

Figure 28 shows the number and location of the 121 equine cases of EEE and the one equine case of WEE reported by both the NVSL and CDC.

One horse had antibody against Venezuelan equine encephalomyelitis (VEE), but its antibody titer was stable. There were four human EEE cases in 1995 with one each in Florida, Indiana, Massachusetts, and Michigan.

☐ Porcine Reproductive and Respiratory Syndrome (PRRS) Virus

Criteria: Virus isolation or antibody detection by indirect fluorescent antibody.

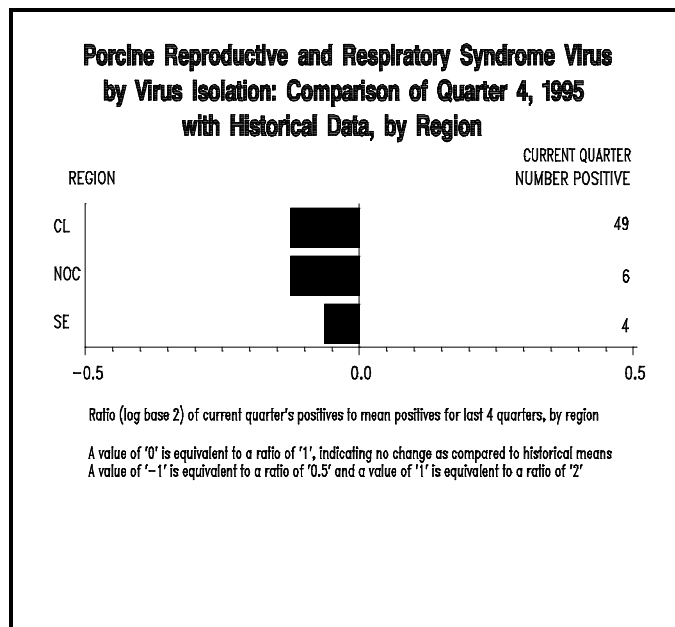


Figure 29

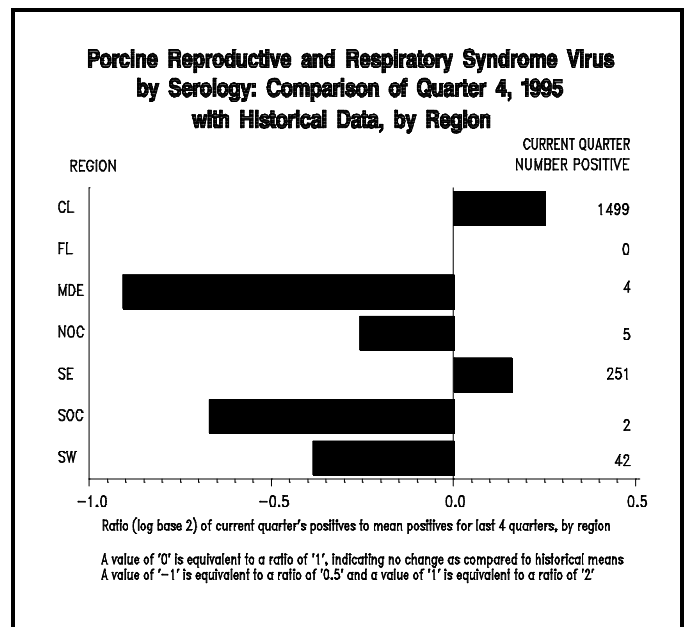


Figure 30

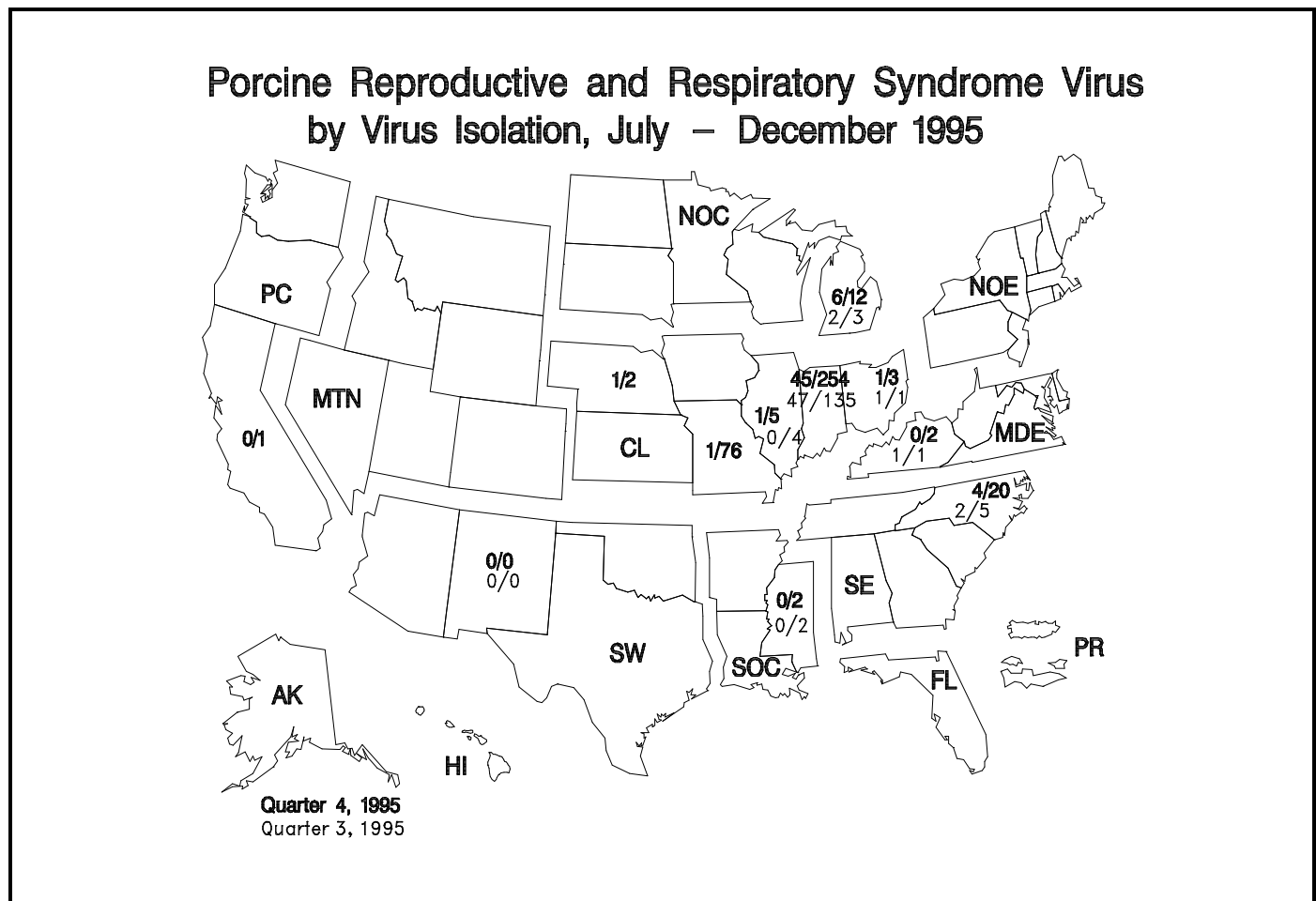


Figure 31

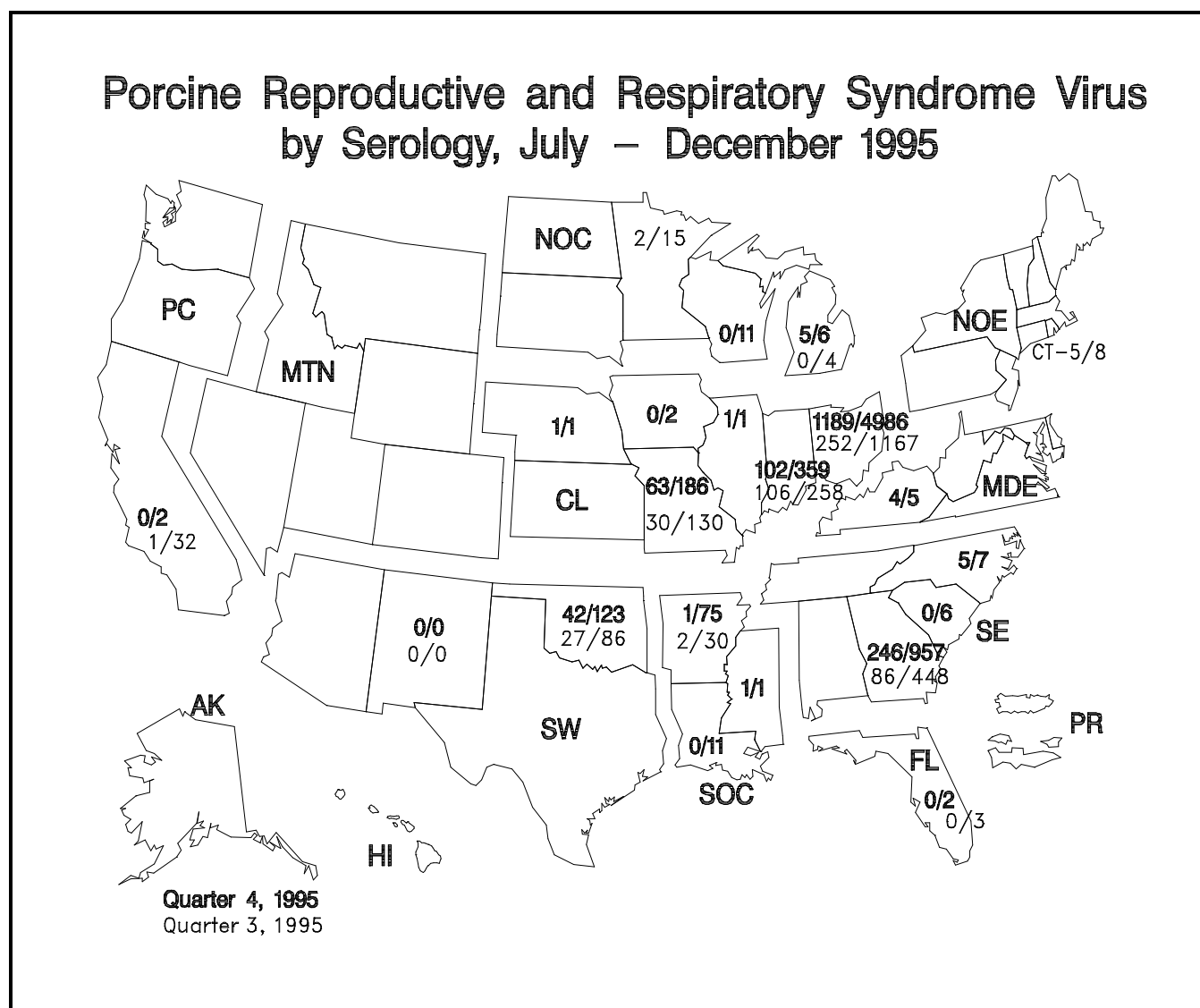


Figure 32

Figure 29 shows the ratio of positive virus isolation tests for porcine reproductive and respiratory syndrome (PRRS) for quarter four 1995 (October 1 through December 31) compared to the average number positive for the previous four quarters. The Mideast region (not shown) reported zero positive for the current quarter compared to an average of two positive for the previous four quarters. The Pacific region (not shown) reported zero positive compared to an average of 0.67. The South Central and Southwestern regions (not shown) each reported zero positive compared to averages of one.

Figure 30 shows the ratio of serology test results for PRRS for the fourth quarter of 1995 compared to the previous four quarters. The Pacific region (not shown) reported zero positive for the current quarter compared to an average of 10.75 for the previous four quarters.

Figure 31 shows the results reported for virus isolation for the third and fourth quarters of 1995, by State. Virus isolation for PRRS virus resulted in 59 positives out of 377 tests run (15.7 percent) for the fourth quarter of 1995.

Figure 32 shows the results reported for IFA serology for the third and fourth quarters of 1995, by State. Indirect fluorescent antibody (IFA) serology testing for PRRS resulted in 1,665 positives out of 6,747 tests run (24.7 percent) for the fourth quarter of 1995.

NOTE: States with no values are nonreporting states.

I. Patterns of Selected Diseases

□ Swine Brucellosis

Source: Dr. Joe Anelli
USDA:APHIS:VS
Swine Health Staff
(301) 734-7767

State Classifications:

Stage 1: Organization. Surveillance and traceback begun.

Stage 2: At least 10 percent surveillance per year. At least 80 percent of tracebacks successful.

Stage 3: Validated Free. At least five percent surveillance per year. At least 80 percent of tracebacks successful.

There were no Stage 1 States for swine brucellosis at the time of release of this report. There were no State classification changes between July and September 1995. The total number of newly detected herds was 18 in the third quarter of 1995 (Figure 33).

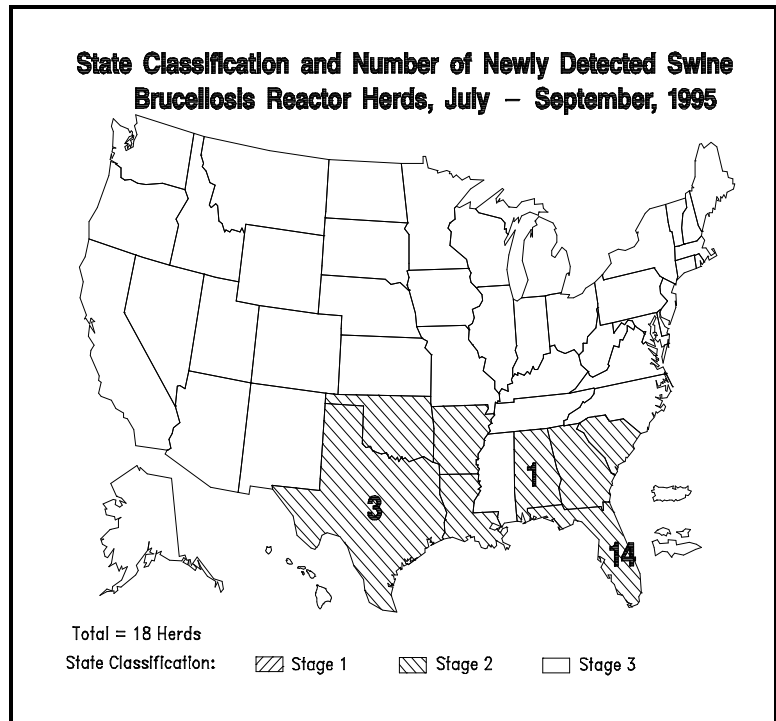


Figure 33

There were 27 swine herds under quarantine for brucellosis at the end of the third quarter of 1995 (Figure 34), 11 more herds than were quarantined during the second quarter of 1995. Florida and New Jersey each had one swine herd depopulated during the third quarter of 1995, while Texas had 20 herds depopulated.

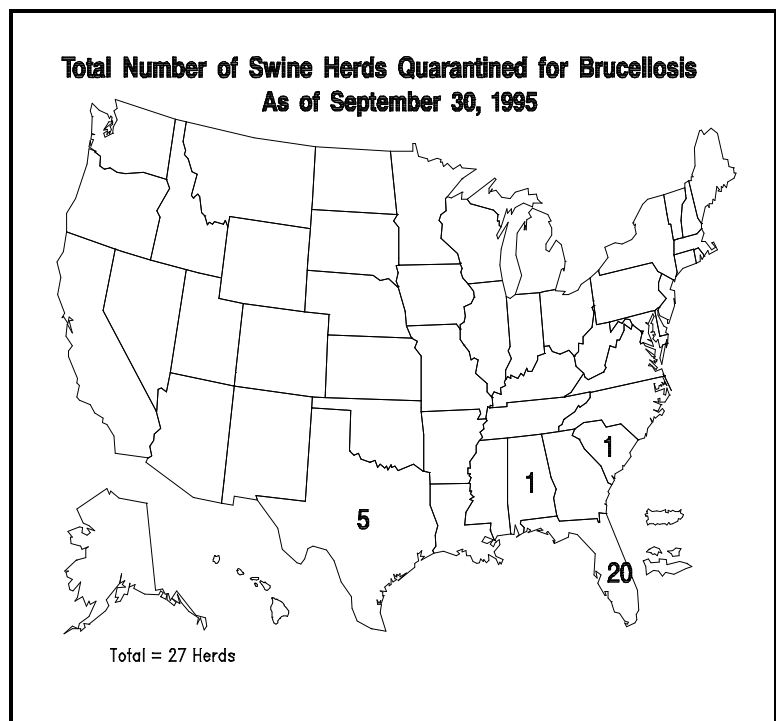


Figure 34

II. Selected Etiologic Agents Associated with Bovine Abortion

Section II contains information on selected agents associated with bovine abortions (aborted fetuses or congenitally infected calves) from accessions reported to veterinary diagnostic laboratories.

Neospora spp. 22

Key to Figures in this Section:

- Deviation bar charts show the base 2 logarithmic transformation of the ratio of positive accessions for the current quarter to the mean of positive accessions for the previous four quarters. A value of '0' is equivalent to a ratio of '1', indicating no change compared to historical values. Each incremental unit change indicates a doubling (positive change) or halving (negative change) of the present value compared to the mean of the historical values.
- Maps of conditions reported by participating laboratories show total number of positive accessions over total number of accessions run, per State, for the current and previous quarter.
- In some cases, the denominator is a minimum because some laboratories were not able to determine the total number of negative accessions.
- Data are presented by region or State of specimen origin and quarter of the calendar year for specimen submission.
- See map on inside front cover for regions.

II. Selected Etiologic Agents Associated with Bovine Abortion

☐ *Neospora* spp.

Criteria: Histopathology and detection of antigen by immunohistochemistry or detection of antibody in aborted fetus by indirect FA.

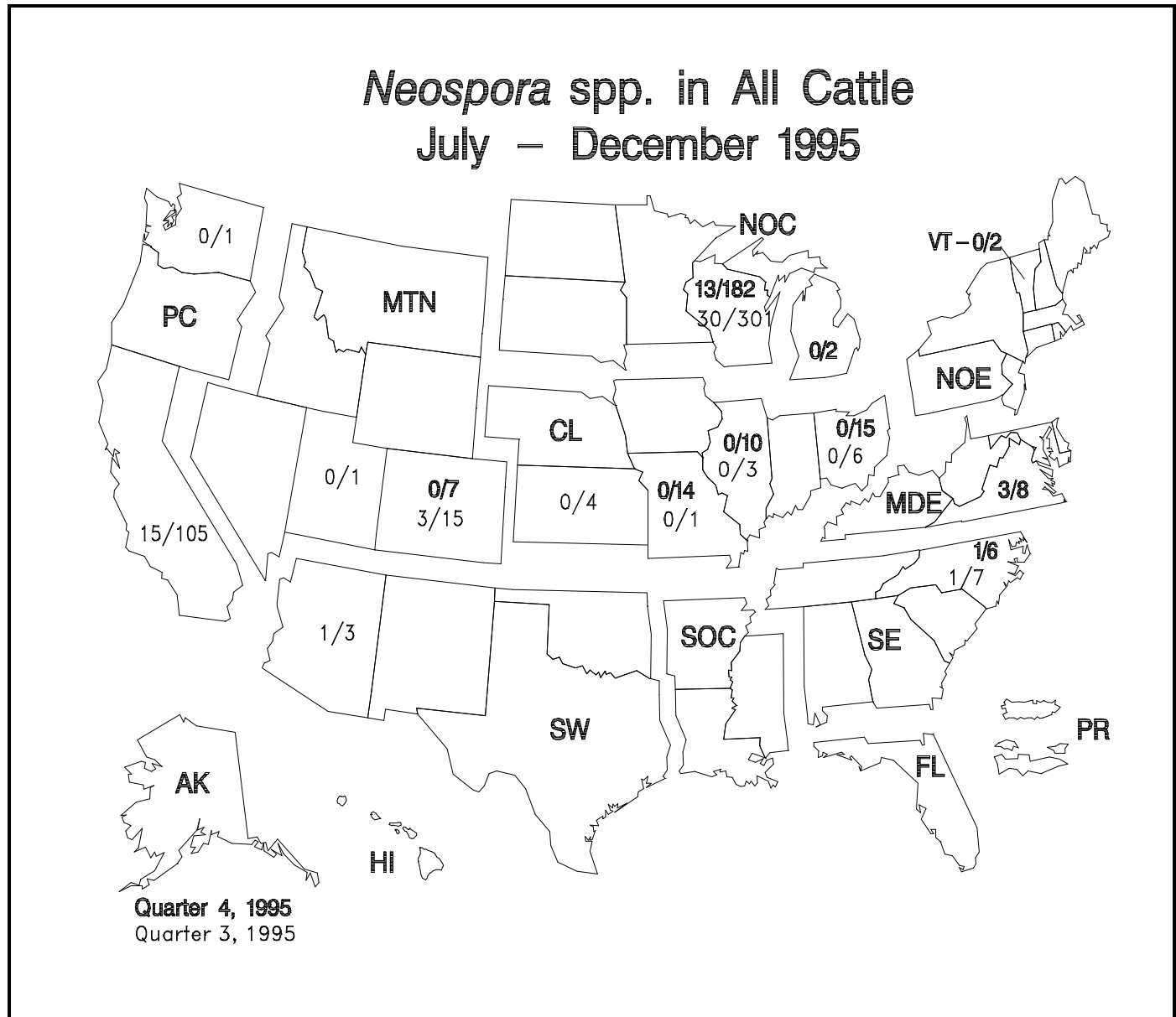


Figure 35

Figure 35 shows the distribution of accession test results reported for *Neospora* spp. for the third and fourth quarters of 1995, by State. For all cattle, 17 out of 246 (6.9 percent) accessions tested for *Neospora* spp. were positive during the fourth quarter of 1995.

NOTE: States with no values are nonreporting States.

Appendix

This section provides tables displaying the most recently reported diagnostic laboratory data.

Bovine Leukosis Virus	24
Paratuberculosis by Culture, Histopathology, or DNA Probe	25
<i>M. paratuberculosis</i> by Serology	26
Equine Viral Arteritis Virus	27
Porcine Reproductive and Respiratory Syndrome Virus	27
<i>Neospora</i> spp.	28

Key to Tables in this Section:

- Data are presented by laboratory of specimen origin and quarter of specimen submission. Because individuals within a State may utilize outside laboratories in addition to their own, the State numbers presented in the State maps may not agree with the numbers presented by reporting laboratory in the appendix.
- Values represent the number of positive tests or accessions (P) and the number of tests performed or accessions tested (T).
- Values reported in the "TOT" category represent all tests performed during the year. This category may include some tests for which a month of specimen submission was not known. Therefore, the sum of the quarterly values may not be equal to the "TOT" values.
- Data totals (positives and total tests) shown for "Total" include specimens of unknown bovine class, in addition to specimens from beef or dairy cattle. Thus, the sums of dairy cattle totals and beef cattle totals do not always equal the totals shown for all cattle.
- Values reported for all diagnoses/agents are for quarters in 1994 and 1995.
- In some cases, the reported total number of tests performed is a minimum because some laboratories were not able to determine the total number of negative tests performed.
- Abbreviations for laboratories used in the tables are:

ARVDL = Arkansas	CAVDL = California	COVDL = Colorado	FLVDL = Florida
GAATH = GA, Athens	GATFT = GA, Tifton	IAVDL = Iowa	INVDL = Indiana
KYMSU = KY, Hopkinsville	KYVDL = KY, Lexington	MNDVL = Minnesota	MOVDL = Missouri
NDVDL = North Dakota	NEVDL = Nebraska	NMVDL = New Mexico	NVSL = National
NYVDL = New York	OHVDL = Ohio	OKVDL = Oklahoma	ORVDL = Oregon
PAVL = TX, Austin	PRVDL = Puerto Rico	SCVDL = South Carolina	SDVDL = South Dakota
TNVDL = Tennessee	TXVDL - TX, College Sta.	VAVDL = Virginia	WIVDL = Wisconsin
WYVDL = Wyoming			

Appendix

Bovine Leukosis Virus

Lab	Beef					Dairy					Total				
	---- Quarter ----				TOT	---- Quarter ----				TOT	---- Quarter ----				TOT
	1/95	2/95	3/95	4/95		1/95	2/95	3/95	4/95		1/95	2/95	3/95	4/95	
CAVDL	P	4	1	2	7	70	55	213		338	84	66	324		474
	T	4	1	22	27	227	219	950		1396	262	268	1554		2084
COVDL	P	3	5	3	2	13	39	32	40	33	144	45	42	45	167
	T	70	63	66	63	262	170	217	169	323	879	274	292	260	1217
FLVDL	P	5	5	3	14	27	65	47	31	15	158	70	52	34	185
	T	29	29	50	56	164	108	100	42	19	269	137	129	92	433
GAATH	P										79	89	38	16	222
	T										157	196	78	50	481
GATFT	P										53	33	52	54	192
	T										141	113	120	151	525
INVDL	P		0	23	23	46	15		11	5	31	15	0	34	77
	T		20	66	49	135	68		17	14	99	68	20	83	234
KYMSU	P										111	74	90	98	373
	T										225	339	185	236	985
KYVDL	P	4	2	8	14	19	9	25		53	27	11	37		75
	T	9	15	27	51	39	19	49		107	57	39	98		194
MNVDL	P										126	188	70	91	475
	T										325	817	249	374	1765
MOVDL	P	1	12	16	25	54	3	35	18	21	77	4	50	38	140
	T	12	30	33	43	118	12	45	33	21	111	27	84	75	255
NDVDL	P										58	8			66
	T										234	56			290
NMVDL	P										3	2	0	0	5
	T										3	2	0	0	5
NVSL	P										4	1	2	23	30
	T										18	4	55	214	291
NYVDL	P										456	344	276	376	1452
	T										2847	2890	1907	2957	10601
OHVDL	P										732	495	494	1890	3611
	T										3605	2411	2366	6075	14457
OKVDL	P	24	12	9	13	58	21	13	28	41	103	61	31	40	204
	T	73	29	28	56	186	23	22	57	52	154	168	57	97	456
TNVDL	P										100	70	115	82	367
	T										255	168	379	278	1080
TXVDL	P										180	182	184	218	764
	T										633	1315	2628	2830	7406
VAVDL	P	64	86	8	7	165	7	5	16	18	46	71	91	24	211
	T	172	768	77	28	1045	17	13	62	109	201	189	781	139	1246

Paratuberculosis by Culture, Histopathology, or DNA Probe

Lab	Bovine						Ovine					Caprine				
	----- Quarter -----		----- Quarter -----		----- Quarter -----		----- Quarter -----		----- Quarter -----		----- Quarter -----		----- Quarter -----			
	4/94	1/95	2/95	3/95	TOT		4/94	1/95	2/95	3/95	TOT	4/94	1/95	2/95	3/95	TOT
CAVDL	P	0			0						0				0	
	T	1			1						17				17	
COVDL	P	0	0	1	1	2										
	T	161	200	55	185	601										
FLVDL	P	7	28	17	22	74	0			0	0	0	1	0	1	
	T	60	91	41	70	262	7			7	14	5	23	0	42	
INVDL	P	1	1	3	1	6										
	T	1	1	3	1	6										
KYVDL	P	8		4		12										
	T	67		16		83										
MNVDL	P	35	24	21	21	101										
	T	118	145	98	68	429										
MOVDL	P	4	2	3	3	12										
	T	28	54	10	25	117										
NDVDL	P	2	3			5										
	T	2	3			5										
NVSL	P	1	6	6	3	16	0			0		0	0	0	0	
	T	18	45	10	6	79	1			1		6	1	7		
NYVDL	P	133	163	108	134	538	1	0	1	1	3	0	0	4	0	4
	T	825	1549	889	817	4080	11	15	28	6	60	25	4	23	12	64
OHVDL	P	157	120	177	125	579	0			0		3			3	
	T	899	1257	1643	1005	4804	2			2		5			5	
VAVDL	P			2		2										
	T			2		2										
WIVDL	P	103	70	80	94	347	0			0	0	4		1	5	
	T	371	360	185	306	1222	1			1	2	57		4	63	

Appendix

M. paratuberculosis by Serology

Lab	M. paratuberculosis by Serology														
	Bovine					Ovine					Caprine				
	---- Quarter ----					---- Quarter ----					---- Quarter ----				
	1/95	2/95	3/95	4/95	TOT	1/95	2/95	3/95	4/95	TOT	1/95	2/95	3/95	4/95	TOT
CAVDL P	5	3	10		18	1	1	5		7	0	0	3		3
T	194	91	293		578	3	3	22		28	12	4	21		37
GAATH P	4	4	5	3	16										
T	29	40	51	17	137										
GATFT P	0	0	0	1	1								1	1	
T	20	5	15	10	50								1	1	
INVDL P	16	27	11	21	75							0		0	
T	65	57	47	61	230							1		1	
KYMSU P	42	12	2		56										
T	197	166	17		440										
KYVDL P		4			4										
T		79			79										
MNVDL P	126	89	123	110	488										
T	325	216	333	274	1148										
MOVDL P				38	38										
T				51	51										
NDVDL P	15	15			30										
T	314	119			433										
NMVDL P	0	0	0	0	0										
T	0	2	0	0	2										
NYVDL P	79	112	127	101	419	10	10	4	0	24	3	3	3	6	15
T	317	349	522	575	1763	110	281	181	113	685	46	33	47	94	220
OHVDL P	236	176	296	714	1422										
T	2346	1549	2265	7156	13316										
OKVDL P	4	7	13	20	44	0	0	0	3	3		0			0
T	44	42	76	52	214	2	1	8	13	24		5			5
PAVL P	4	9		13	3	0				3	26	62			88
T	97	175		272	27	38				65	489	1270			1759
TNVDL P	15	17	21	25	78										
T	40	103	402	239	884										
VAVDL P	20	7	8	22	57										
T	65	28	23	101	217										
WIVDL P	160	184	176	173	693	0	0			0	5	4	1		10
T	320	393	374	346	1433	7	5			12	6	7	4		17

Equine Viral Arteritis Virus

|----- Quarter -----|

Lab		1/95	2/95	3/95	4/95	TOT
CAVDL	P	6	2	24		32
	T	384	234	384		1002
COVDL	P	0	0	0	1	1
	T	313	4	36	47	400
FLVDL	P	15	3	14	18	50
	T	1921	1159	1992	1100	6172
GAATH	P	2	1	1	0	4
	T	26	22	76	17	141
GATFT	P	2	0	0	2	4
	T	22	5	21	15	63
KYVDL	P	21	3	113		137
	T	676	637	6322		7635
NMVDL	P	0	0	0	0	0
	T	0	3	0	5	8
NVSL	P	8	5	3	9	25
	T	181	182	181	475	1019
NYVDL	P	25	18	40	39	122
	T	470	318	719	568	2075
VAVDL	P	0				0
	T	15				15

Porcine Reproductive and Respiratory Syndrome Virus
Indirect Fluorescent Antibody

|----- Quarter -----|

Lab		1/95	2/95	3/95	4/95	TOT
CAVDL	P		23	1		24
	T		52	30		82
GAATH	P	38	93	37	175	343
	T	441	333	310	694	1778
GATFT	P			49	71	120
	T			138	263	401
INVDL	P	66	36	106	122	330
	T	274	216	264	380	1134
MNVDL	P	5186	3621			8807
	T	16492	9989			26481
MOVDL	P	24	40	30	62	156
	T	118	136	130	185	569
NMVDL	P	0	0	0	0	0
	T	0	0	0	0	0
NVSL	P	78	74	19	8	179
	T	242	371	135	198	946
OHVDL	P	61	392	242	1185	1880
	T	509	1123	1089	4904	7625
OKVDL	P	630	35	27	42	734
	T	876	136	85	123	1220
WIVDL	P	15	0			15
	T	71	15			86

Porcine Reproductive and Respiratory Syndrome Virus
Virus Isolation

|----- Quarter -----|

Lab		1/95	2/95	3/95	4/95	TOT
INVDL	P	69	70	53	58	250
	T	234	247	151	301	933
MNVDL	P	15				15
	T	606				606
MOVDL	P				1	1
	T				76	76
NMVDL	P	0	0	0	0	0
	T	0	0	0	0	0

Appendix

Neospora spp.																
Beef					Dairy					Total						
---- Quarter ----					---- Quarter ----					---- Quarter ----						
Lab	1/95	2/95	3/95	4/95	TOT	1/95	2/95	3/95	4/95	TOT	1/95	2/95	3/95	4/95	TOT	
<hr/>																
CAVDL	P	1	1	2	4	5	36	17		58	6	39	21		66	
	T	29	13	40	82	29	85	67		181	59	105	113		277	
COVDL	P	0	0	0	0	0	0	1	0	1	0	0	1	0	1	
	T	30	5	1	4	40	8	16	13	40	52	28	15	7	102	
MOVDL	P													0	0	
	T													14	14	
NDVDL	P									2	1				3	
	T									214	30				244	
<hr/>																
OHVDL	P									0	1	0	0		1	
	T									17	16	6	14		53	
VAVDL	P	0		0	0			3	3		0		3		3	
	T	2		4	6			4	4		2		8		10	
WIVDL	P									19	30	28	14		91	
	T									204	189	313	203		909	
<hr/>																

Free Data Submission Software Available

The DxMONITOR Data Submission System (DDSS) is available free of charge to any laboratory interested in participating in the Veterinary Diagnostic Laboratory Reporting System (VDLRS).

To use the DDSS, data must first be captured by a laboratory in whatever manner works best for that particular laboratory. The summary totals of those data are then entered into a data entry screen which is provided as part of the DDSS. A computer file is automatically created for use in transferring the data. A reference guide leads the user through this process. Because the system was written within a software package called "EpiInfo," a copy of this program and a user's guide are also included. EpiInfo was developed by the Centers for Disease Control and Prevention and the World Health Organization. It has many capabilities including data analysis, word processing, statistics, etc. Please contact the address on the inside front cover of this issue for more information about the DDSS.

LabNEWS Article Submissions are Encouraged

Readers of the DxMONITOR Animal Health Report are encouraged to submit items suitable for the "LabNEWS." All articles should be typed double spaced. Photos/artwork should be camera ready copy. If possible, please provide your article on diskette and indicate what type of software was used to create/store the file (i.e., WordPerfect, Word Star). Send submissions to the address on the inside front cover of this report.

Materials available from the VDLRS are listed below. Send this clip-out order form to:

Veterinary Diagnostic Laboratory
Reporting System
USDA:APHIS:VS
Centers for Epidemiology
and Animal Health
555 South Howes, Suite 200
Fort Collins, CO 80521-2586

INTERNET address:
DxMONITOR@aphis.usda.gov

Quantity

_____ **DxMONITOR Animal Health
Report*** (*Quarterly report of VDLRS
data*)

_____ **Introduction to the VDLRS**
(*An informational brochure*)

_____ **Report of the 1991 DxMONITOR
Committee Meeting** (August 1991)

* The most recent issue of the DxMONITOR will be sent. If you want past issues, please call (970) 490-8000.

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